Paper TRADE JOURNAL

NOVEMBER 10, 1949 PUBLISHED WEEKLY

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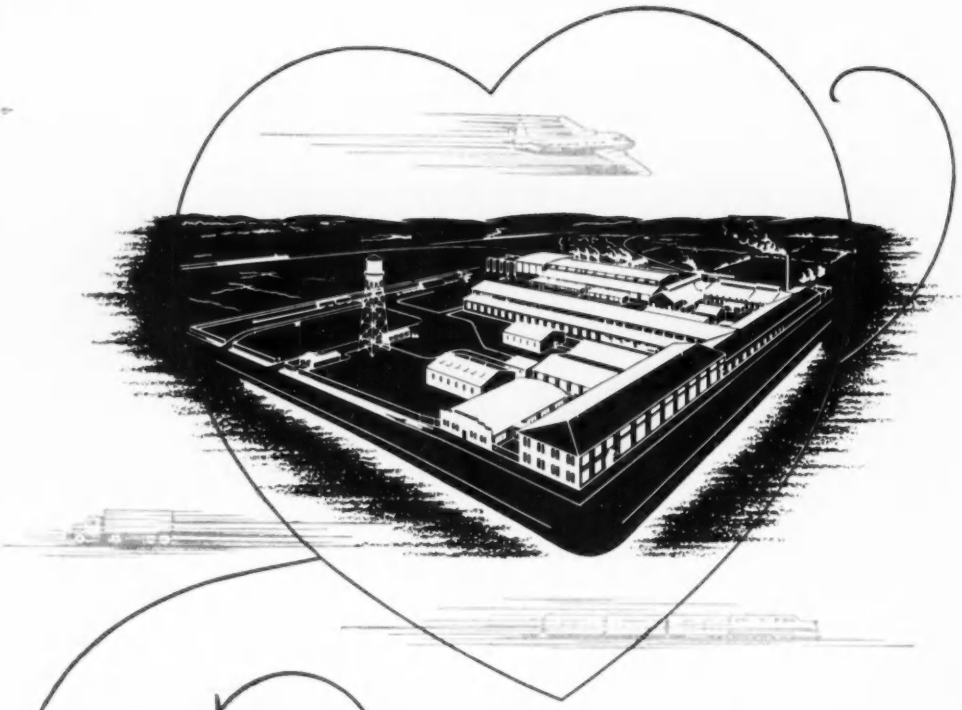

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Yes . . . and, too, Downingtown is only a few miles from Rittenhouse Mill, birthplace of paper making in the United States . . . and within 24 hours motor truck or express rail service of 65% of the paper mills in the United States . . . and close to the Philadelphia Airport, a regular stop of air freight lines serving our Pacific Coast and the entire world.

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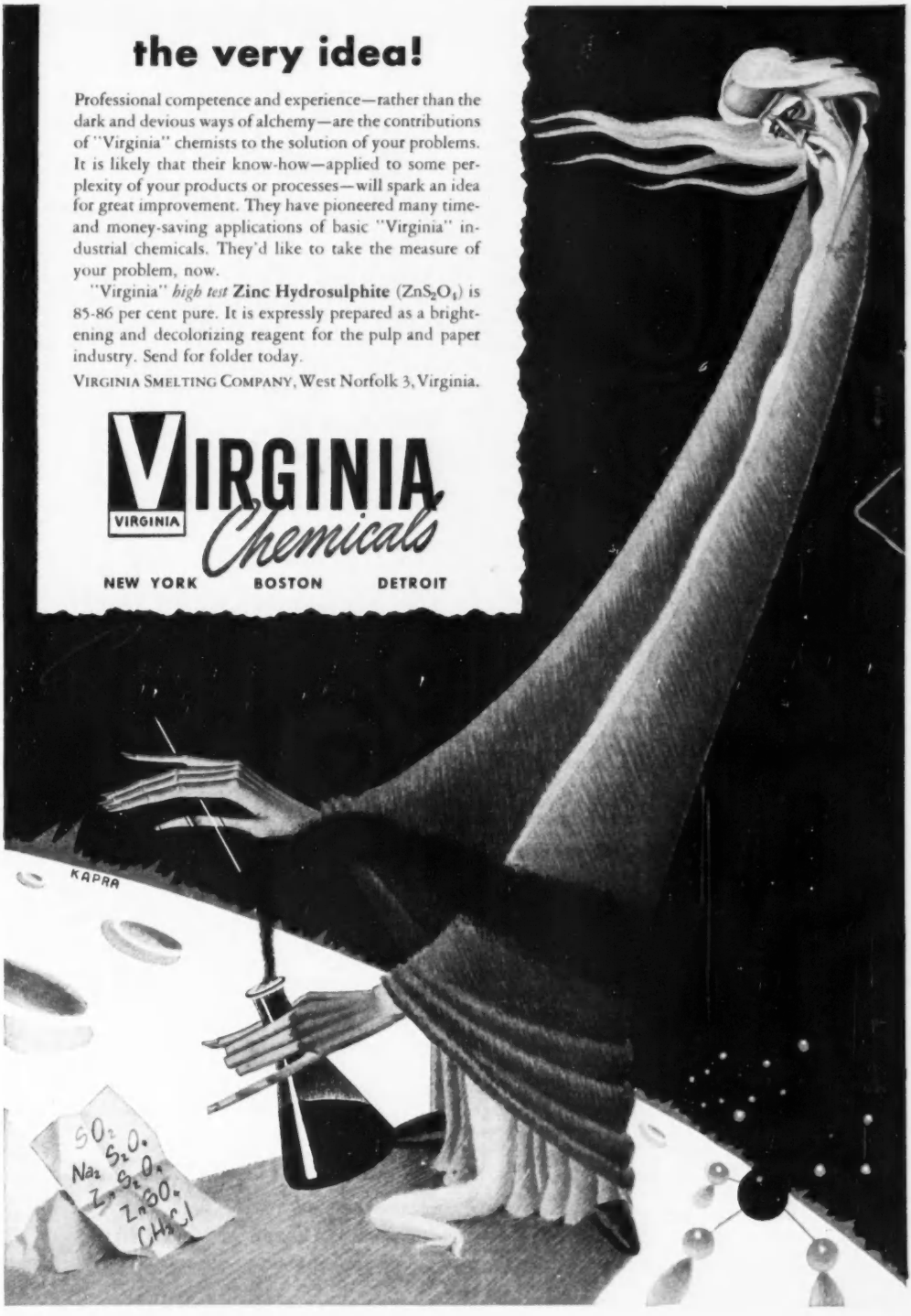

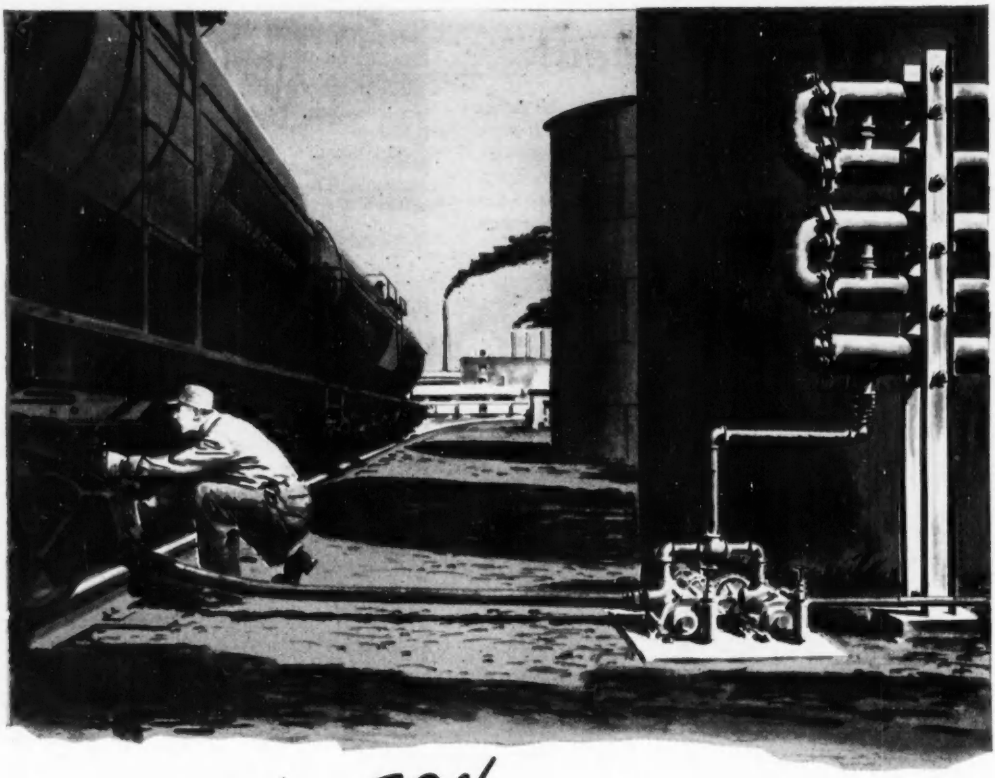

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REPRESENTATIVES

Eastern
BRUCE E. BROWN
FRANKLYN H. OLSEN
15 West Forty-Seventh Street
New York 19, New York
Telephone: PLaza 7-2370

Mid-Western
H. K. VINTON
30 North Dearborn Street
Chicago 2, Ill.
Phone CEntral 6-2784

Pacific Coast
McDONALD-THOMPSON
Publishers' Representatives
(Formerly Roy M. McDonald & Co.)
639 South Wilton Place
Los Angeles 5, Calif.
Phone: DUnkirk 7-2590

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MEMBER

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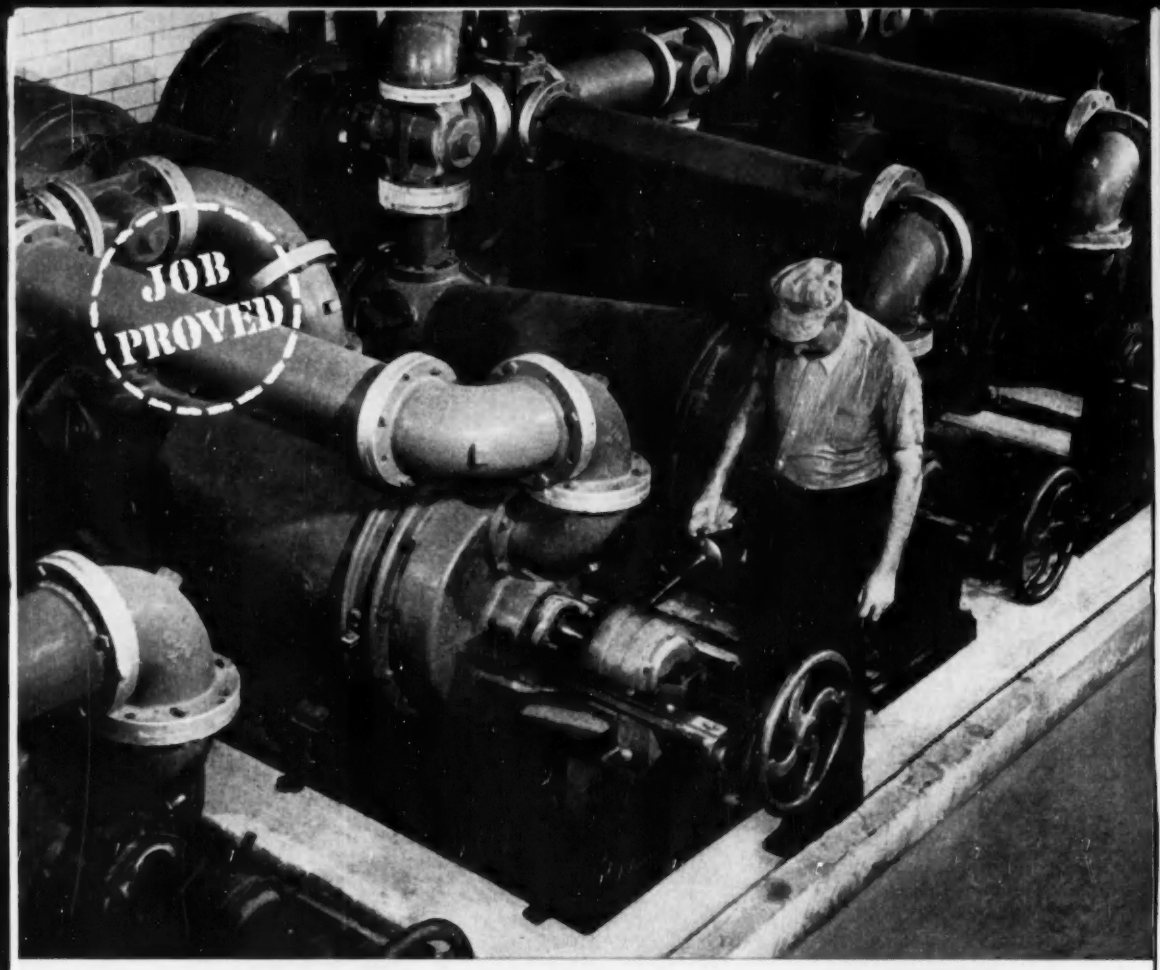

ENDS YEARLY BEARING LOSS OF $10,000

Paper Mill's Jordans, Burning Out Average of 2 Bearings a Week, Are Switched to Sun Oil, Run Almost 2 Years Without a Failure

The gear lubricant used by a paper mill in the bearings of its twelve Jordans was caking up. Bearings had to be replaced on an average of two a week—an estimated loss of $10,000 a year in parts and labor.

In an effort to stop this waste, the mill changed to a "Job Proved" Sun Paper Mill Lubricant. This product has been used for almost 2 years now, and there has not been a single failure due to lubrication—on either the original 12 Jordans, or the 26 that have been added. Thus the right product has stopped a needless expense, and saved maintenance time. Increased production has naturally followed.

This is an example of the way Sun "Job Proved" Products are serving industry everywhere. Each is made for a particular job, and rigorously tested under the severest operating conditions.

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Paper TRADE JOURNAL

TRENDS

Office of the PAPER TRADE JOURNAL,
Wednesday, November 9, 1949.

World Trade and Newsprint

The sixth consecutive annual conference of the U.S., newspaper publishers and Canadian newsprint representatives meeting at Quebec on October 12 and 13 considered with a review of related data the wider problems which newsprint sharply illustrates: the economic division of the western world into two worlds, dollar and non-dollar, with the risk of political division as its sequel.

"For all free countries there is this riddle," the Conference introductory statement read. "Can we be divided in trade but stay together in purpose and effort? To put it more plainly: Can we have two western worlds and survive? . . . It seems sensible that we try to see our present situation in its world perspective and that we try also to appraise our joint affairs under the impact of world changes which newsprint typifies.

"The postwar pattern of world trade is a pattern of diverging lines which previously ran along together. Dollar and non-dollar countries now have a chasm between them. In terms of newsprint, North America is on one side of the chasm; the rest of our world is on the other. At first glance, this may not seem too bad for American consumers or for Canadian producers; and some may even think it is a good idea. With this division of the western world, U.S. publishers have no others except Canadian consumers drawing very much on Canadian tonnage. They have it pretty well to themselves; and it already represents about 80 percent of their supply. Canadian producers, one can argue, are released from obligations in diverse markets and are more free to deal with their U.S., and Canadian customers whose requirements now occupy over 90 percent of the expanded Canadian capacity.

"But this is at first glance only, and the advantages are short-term. The world division applies not only to newsprint but to all commodities. This compression of world trade, *if continued*, eventually would mean lower levels of U.S. sales and employment, of advertising and circulation; lower revenues for U.S. publishers; lower U.S. consumption of newsprint and, finally, lower volume for Canadian mills.

"We know there cannot be a nation half free and half slave. It is equally true that we cannot have a western world half rich and half poor. Such a world would mean lower trade for all, with wider disruption in its wake. . . . It is our common hope that this pattern will *not* continue and that it has been, or will be, broken by currency devaluations or by other methods which the western democracies may cooperatively develop. The validity of this hope, however, remains to be seen."

Scandinavian Newsprint Supply

In terms of newsprint, the pattern broadly means that all countries of the western world outside North America must look to the Scandinavian peninsula for supply, as Australia and England and Argentina already are looking. (ED. NOTE: Lord Beaverbrook stated in Fredericton, N.B., last week that the British Government had notified London newspapers that no newsprint or lumber will be imported from Canada next year.)

"It needs no arithmetic to realize that Scandinavian mills and forests cannot support the rest of our world, even at its meagre level of present supply. The only other large non-dollar source of wood, the primary essential, is Soviet Russia.

"The impossibility of the present pattern carried to its ultimate form takes shape when one visualizes the free press of the non-dollar democracies looking to the forests of Soviet Russia for survival. The end of this pattern, in terms of newsprint, would be of unbearable compression; and this would be true of world commodities and of world trade in general.

Canada and the Dollar Gap

"The problem of the dollar-gap also presents the Canadian Government and the Canadian public with a serious and perplexing situation which is attached to newsprint as Canada's chief export commodity and the principal earner of U.S. dollars. Nor is the present trade situation a difficulty for Canada alone, the Conference stated, since Canada is, by far, the biggest customer of the U.S., among the nations of the world.

National Foreign Trade Convention

"The tremendous complexity of this world-wide problem was the motif of the National Foreign Trade Convention held at the Waldorf-Astoria hotel, October 31, November 1 and 2. Described as the most important convention of the 36 held by the Council thus far, the conference, with a registration of 1800, had as its theme, "World Economic Well-Being Through Increased Production and Trade."

"Increasing production and trade is a lot easier to talk about than to accomplish," said Eugene Holman, president of Standard Oil Co., of N.J., and chairman of the New York convention committee, in his opening remarks. "To bring it about will be a long hard job calling for the exercise of the most realistic industrial statesmanship and the assurance of an attractive economic climate. . . . Many obstacles will have to be surmounted before the flow of goods and services across international boundaries can rise to the volume which will permit our friends among the nations to stand on their own feet.

"It seems unrealistic to me to think that production and trade can be sufficiently increased simply through bilateral trade arrangements. International trade on the scale necessary to accomplish the objective of world economic well-being must necessarily have more elbow room that a series of bilateral deals can give. It may be, however, that the complexity of the problem is such that we must — as it were — *walk* with bilateral agreements before we can *run* with multilateral activities," Mr. Holman stated.

The role of the U.S., as an importer was stressed by Hon. Dean Acheson, Secretary of State, at the World Trade Dinner which closed the convention. "There is a vast difference between accepting the idea that we should increase imports and taking the practical concrete steps necessary to increase them," Mr. Acheson said. . . . "Perhaps the most important obstacle to imports is fear; fear from abroad that they cannot effectively compete in this market, fear in this country that if more imports come in, some in the U.S., are going to be hurt. . . . We are faced with perhaps the most important and one of the most difficult problems in human history: the creation of a politically and economically sound community of free nations. . . . It is fundamental that we become really import-minded."

In a series of recommendations adopted unanimously, the convention proposed a return to a gold coin standard in the U.S., to "set a good example to other countries and hasten the return to sound and convertible agencies."

Production Indexes

Ratio of production of unbleached kraft paper to potential mill capacity for that product was 86.7 percent for the week ended October 29, compared with 84.2 percent for the preceding week, and with 98.9 for the corresponding week of last year.

Comparative ratios of U.S., paper and paperboard production to mill capacity, as reported by AP&PA, are:

	Oct. 29 1949	Oct. 22 1949	Oct. 30 1948	Nov. 1 1947	Nov. 2 1946
Paper	98.6	‡99.0	100.2	111.1	107.2
Paperboard	94.0	94.0	96.0	100.0	100.0

‡ Revised.

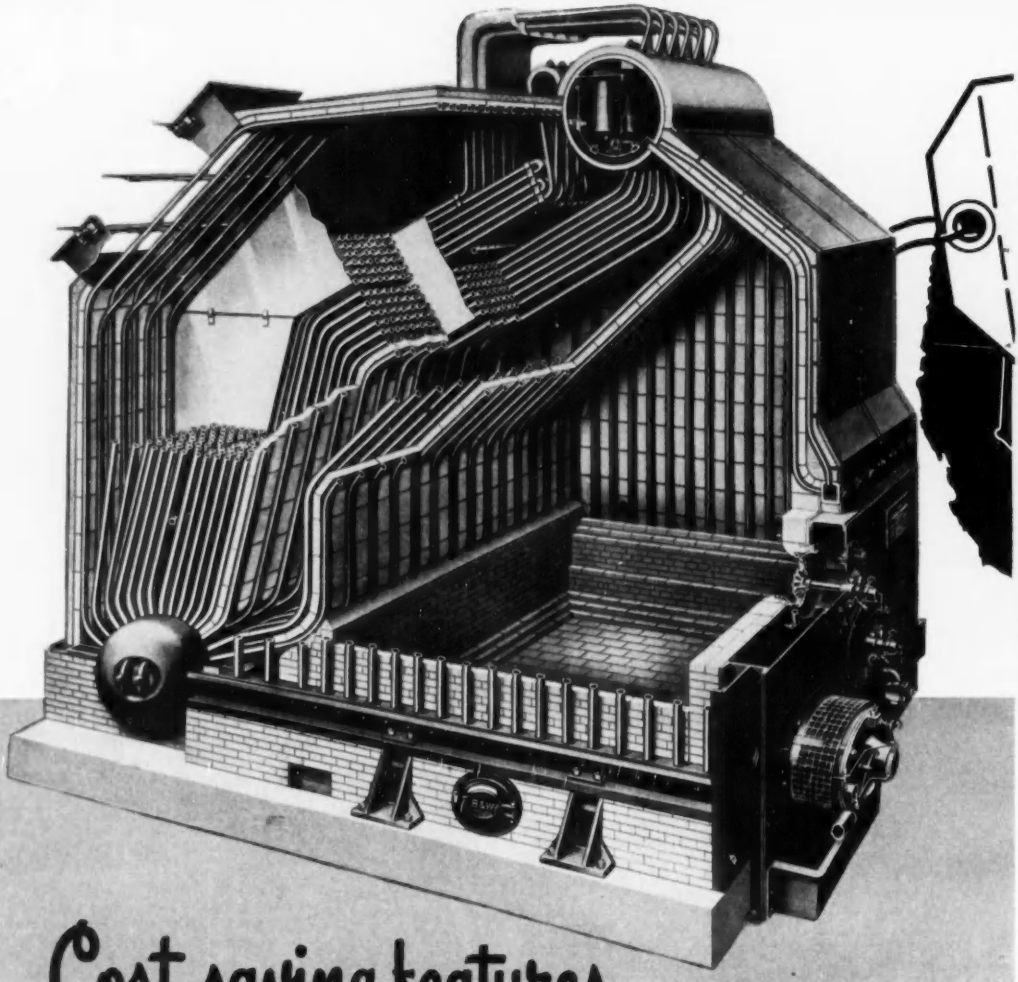
Paperboard Production (Tons)

	Oct. 29 1949	Oct. 22 1949	Oct. 30 1948
Production	203,786	206,400	193,819
New Orders	193,527	195,662	199,563
Unfilled Orders	400,589	411,834	356,928

Percent of Activity, Current, 94%; Year, 81%.

General Business Indexes

Index of general business activity for the week ended October 29 inclined to 122.6 from 121.5 in the preceding week, compared with 154.0 in the corresponding week of 1948. Index of paperboard production rose to 190.0 from 189.2 in the preceding week, compared with 185.2 in the corresponding week of 1948.



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B&W Integral-Furnace Boilers, types FF and FJ, are self-contained, compact units that are piling up highly impressive records for dependable, economical steam generation in pulp & paper mills requiring boiler capacities up to 65,000 lb per hr at pressures above 160 psi. Operating and maintenance features listed on the opposite page indicate why these completely coordinated, standardized designs have earned the confidence of industries, utilities, and other users to the extent of more than 500 installations throughout the U.S.A. and in many other countries.

It will pay you, as it has so many others, to investigate the advantages of these outstanding B&W boilers. Begin by asking for Bulletin G-64. The Babcock & Wilcox Company, 85 Liberty Street, New York 6, N.Y.

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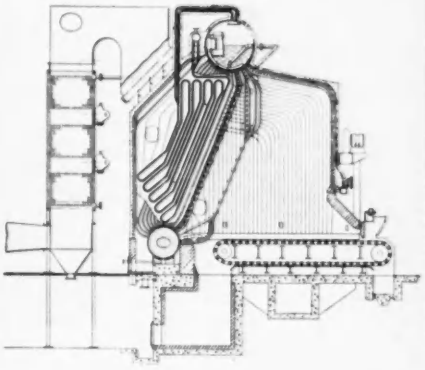
TYPICAL INSTALLATION



Chain-grate stoker-fired, B&W Intregral-Furnace Boiler, Type FJ, with steam capacity of 55,000 lb per hr at 400 psi and 700 F.

P-47

Paper TRADE JOURNAL

News of the Week

MILLS

Sweezey Mill Construction Plan

TORONTO — Construction of a pulp and paper mill near Edmonton, Alta. will start next spring, according to R. O. Sweezey, Montreal investment dealer, who has been conducting negotiations between the Alberta government and Montreal financial interests. Completion of negotiations is expected as soon as Mr. Sweezey can go to Edmonton. The Beauharnois hearings are presently keeping him in Montreal. If the agreement is signed, as expected, construction will be launched as soon as possible.

Completion will depend on the time needed for delivery of equipment, but it should be by the spring of 1951, Mr. Sweezey estimated.

Initially the proposed mill will consist of one machine with a capacity of 200 tons of newsprint a day. This will be followed by other machines as the demand warrants, it is stated.

The company may wait a year or two before installing equipment for the manufacture of chemical pulp.

Limits for the mill will be along the foothills and north of Edmonton. There will be sufficient limits, with scientific cutting, to permit operation of the mill in perpetuity. Most of the wood is expected to come to the mill (less than ten minutes from the center of Edmonton) by rail. Wood supply consists mainly of spruce and jackpine.

Western Canadian publishers and U.S. publishers in the Middle West will constitute the market. The 200-tons-a-day initial capacity planned has already been spoken for, Mr. Sweezey stated.

Wausau Bleach Plant Improvements

BROKAW, Wis. — The new bleach plant development at the Wausau Paper Mills continues. Latest improvements on the planning board are an 8 x 10 Impco washer with a feltless wet machine. The combination machine figures in the final washing of pulp after bleaching and removal of water.

As water is taken out the 40 percent air-dry pulp passes through slitters and cutters. (Present wet-machine laps are only 32 to 33 percent air-dry.) Cut sheets, 30" x 30" pass along a short conveyor to skids and eventually to storage piles.

The new equipment will handle up to 125 tons of pulp in 24 hours. Eventually, all the stock will be lapped out and weighed. There has also been some thought given to classifying and grading pulp as an added quality control factor.

The new washer-wet machine will be set up in the present third floor pulp storage area. Old wet machines will be moved and storage areas shifted.

Another piece of equipment, just about completed, also figures in the new bleaching system. This is a large tank, 23' 6" in diameter, 10' high, of ½" welded steel construction. It is to be used primarily for dilution and storage of liquid caustic soda. This presents special handling problems because of the heat generated in diluting the caustic soda. Manufacturers recommend a sequence of operations for unloading and diluting the 74 percent caustics. Certain precautions must be observed closely for safe, efficient handling of this material.

Sutherland Preferred Issue

KALAMAZOO—Sutherland Paper Co. has filed a registration statement with the FEC covering 34,400 shares of its $100 par value cumulative preferred stock.

According to the prospectus, the preferred shares are convertible into common stock at any time prior to January 1, 1960. Harris, Hall & Co. Inc., Chicago, has been named as principal underwriter.

The stock will be offered for prior subscription by common stockholders at the rate of one preferred share for each ten shares held on a record date to be specified later. The offering price, dividend rate and other terms are to be filed by amendment. Proceeds will be used by Sutherland to improve its plant and for working capital.

WILLIAM D. WELSH

—of the industrial and public relations department of the Crown-Zellerbach Corp., San Francisco, was guest speaker at the dinner of the annual sessions of the British Columbia division, Canadian Weekly Newspaper Ass'n at Hotel Vancouver, Vancouver, B. C., October 28. His address was titled "Freedoms Columns" . . . Over 100 delegates and their wives attended the dinner which was preceded by a reception given by the Western Branch, Canadian Pulp & Paper Ass'n., with Chairman Paul E. Cooper and members of the executive committee, and their wives, as hosts.

Wausau Closes Wage Negotiations

BROKAW, Wis.—Wausau Paper Mills has concluded wage negotiations. After two meetings with representatives of a joint bargaining committee the following was agreed upon: (1) Pay for one unworked holiday, (Christmas); (2) Night shift premiums increased from 0-2-4 cents to 0-3-5 cents, (Effective October 10, 1949); (3) A number of changes in the body of the contract which closely resembles the working agreement of Marathon; (4) A nine-month contract, September 1, 1949, to June 1, 1950, with no reopening provision. Also agreed to was a discussion of the 1950 vacation program some time in January.

Sherbrooke Buys Brompton Property

BROMPTONVILLE, Que.—The City of Sherbrooke has bought the Brompton Pulp & Paper Co. property here for $725,000, according to a report, with the city's initial proposal to purchase this property said to have been refused by the company as too low. However, after considerable negotiation, this second offer has been accepted so that the company's property at Bromptonville will be taken over by the City of Sherbrooke, including the electric power plant, paper mill, dam, lots and buildings.

Bloomington Expanding

BLOOMINGTON, Ill.—Added machinery and equipment to step up production of cotton pulp is being installed at the Bloomington Alpha Cellulose Co. plant.

W. A. Springer said that production, stopped for several months, is expected to be resumed shortly. The company, located in the former GM&O blacksmith shop, manufactures cotton material for paper makers from waste cotton gins.

Hawthorne Adding Two Victories

KALAMAZOO—Hawthorne Paper Co. has put into service a Victory beater, the first of two it is adding, H. Gerpheide, president, reports. Local representative of the Noble & Wood Machine Co., which supplied the new equipment, is C. B. Smith of 2344 Crane avenue.

Aurora Argument Adjusted

AURORA, Ill.—The long drawn out dispute between the Aurora Paperboard Co. and Local 902, UPWA (CIO), which started shortly after the firm purchased the physical plant of the Aurora branch of the Consolidated Paper Co., on May 5, last, was settled October 25 in the Kane county circuit court at Geneva before Judge Charles A. O'Connor.

Under the terms of an agreement, approved by the court, the union recognized the right of the Aurora Paperboard Co. to choose its own employes and the firm agreed to select employes on the basis of merit and not to discriminate against former employes of the Consolidated Paper Co. because of such employment.

By agreement between the various parties involved, the court dismissed a $200,000 damage suit brought by the Aurora Paperboard Co. against the UPWA and local 902, together with its officers and members; an injunction obtained by the company against the union; a $324,000 damage suit in which the union sought $208,000 from the Aurora Paperboard Co., and $108,000 from the Consolidated Paper Co., and a petition of the union for an injunction against the Aurora Paperboard Co.

The court, on its own motion, also dismissed an order calling upon 26 union members to show why they should not be held in contempt for violation of the injunction.

Also to be withdrawn are actions brought by the union and the Aurora Paperboard Co. before the NLRB each charging the other with unfair labor practices.

The Aurora Paperboard Co., it was announced, would start immediately to prepare its plant for the start of manufacturing operations. This was expected to take at least 30 days to accomplish.

The Consolidated Paper Co., which has its main plant and headquarters at Monroe, Mich., opened its branch plant in Aurora in 1911. This plant, which normally employed about 135 workers, was closed April 30, subject to the sale of the property.

On May 5, the physical property was purchased by the Aurora Paperboard Co., a new Illinois corporation, and extensive changes and improvements in equipment and methods were to be made before operations were begun.

Shortly thereafter picketing of the plant was begun by members of Local 902 of the UPWA (CIO), which had had a bargaining contract with the Consolidated Paper Co. It was the contention of the union members that they had received no satisfactory response for recognition by the Aurora Paperboard Co., and that employes of Consolidated had been refused employment by the new firm.

On July 17, the Aurora Paperboard Co. secured an injunction restraining the CIO from alleged illegal acts. At the same time the firm filed a suit for $200,000 damages against the UPWA and its local affiliate, No. 902, along with all of their directors, agents, officers and members, for damages actually sustained and for punitive damages.

The complaint, seeking $100,000 for damages sustained and an additional $100,000 punitive damages, alleged that, when Consolidated sold its physical plant, it discharged all of its employes and that Aurora, as a new organization, had the right to hire its own employes and to start operating as any new business. The new firm, however, expressed a willingness to recognize the union as the bargaining agent of the employes it hired provided the international and local unions offered evidence that they represented a majority of the employes so hired.

The injunction restrained international and local union organizations from committing any illegal acts or breaches of the peace, but preserved the right of peaceful picketing.

On July 20, 26 men, 13 of them named as defendants in the $200,000 damage suit and injunction, were ordered by Judge O'Connor to show cause why they should not be cited for contempt of court.

On July 29, Local 902 and 142 members of that organization filed a suit for $324,000 damages and injunction against the Aurora Paper and Consolidated companies, claiming that the successor firm was liable under the provisions of their union contract and asked $108,000 damages from the Aurora Paperboard Co. for loss of wages, $108,000 for punitive damages and $108,000 from the Consolidated Paper Co. for breach of contract.

They asked an injunction restraining the new firm from hiring any other employes until all of the plaintiffs had been put to work on a seniority basis.

PARCHMENT MILE POST

R. A. Hayward (left), president of the Kalamazoo Vegetable Parchment Co., Parchment, Mich., congratulates Pastor A. R. Grattan on the recent celebration of the 25th Anniversary of the Union Methodist Church in that city. The church was founded in 1924 when the model community of Parchment, inspired by the late Jacob Kindleberger, was just a village struggling up out of the hills surrounding the paper plant.

UNION BAG UPS BRADLEY, PATTERSON

S. K. Bradley (left) has been named assistant director of multiwall bag sales of the Union Bag & Paper Corp., New York . . . J. J. Patterson (right), former multiwall sales representative, succeeds Mr. Bradley as Eastern district sales manager for multiwall bag sales.

172 Safe Days at KC

KIMBERLY, Wis. — Kimberly - Clark Corp'n. employes here, who are making safety history for the company, passed their 172nd safe day on November 1 with 1,400 workers on the payroll. The plant is trying to reach New Year's day without a lost-time accident. A mark of 150 safe days, topping a record set at the mill 25 years ago, was reached October 10. A safety contest now in progress at the mill will end December 15 to allow employes to receive awards in time for Christmas.

Conant Regent Vice-President

NEW YORK—John K. Conant has been elected vice-president of the Regent Pulp & Chemical Co., 52 Vanderbilt, Ave.

Better Roads With Sulphite Liquor

PARK FALLS, Wis. — The Kansas City Star Co., Flambeau Paper Division, has been applying waste sulphite liquor to its roads with good success. The binder is non-poisonous and non-corrosive in road treatment. It is composed of 12 percent solids: six percent lignin, five percent sugar and one percent residual chemical. It forms a lacquer-like taffy colored coating which also protects metals and rubber. Sprayed on painted metal surfaces it is said to make paint last longer.

In the Park Falls area the soil has clay in its composition. After several coats of binder were applied to the roads it was found that this gave the appearance of black-top and became very hard when dry. The binder hardens a road to the extent that it will shed water, and in wet weather does not soften as fast as untreated dirt or gravel roads.

Another valuable point found was the prevention of frost damage in the spring. As pre-treatment for black-top roads, it makes an excellent base because of its hardening qualities, preventing loose soil under black-top from creeping or rippling, and reduces maintenance costs.

In the Rhinelander area, where the soil is sandy, several experimental strips have been covered. Several more coats of binder will be applied periodically and observed under various weather and traffic conditions before it will be released for general use.

The cost is around $150 per mile for the first year and, as each year passes, the cost reduces.

All-Out Effort Cuts Accidents

OCEAN FALLS, B. C.—The Pacific Mills, Ltd. plant has been setting new safety records. On October 4 this division had operated 100 days without a compensable accident. During that period, the employes worked approximately 1,000,000 man hours. These figures are impressive when compared with previous statistics for the mill. During 1948, the frequency rate was 52.3 and the severity rate 2.88. Despite poor performance for the first few months of 1949, the year-to-date severity rate is less than .50 and declining rapidly.

At least one senior management member is in attendance at each Department meeting. In addition, a weekly meeting of top mill management is held to discuss; progress of the safety campaign. Employe meetings have been made more interesting and resultful by the use of moving pictures, safety graphs, etc. Work orders and safety suggestions are being followed up and instituted as promptly as possible. The former heavy back-log of uncompleted work is rapidly disappearing. Follow-up of injured workmen and their rehabilitation is now exceptionally good.

In recognition of the efforts of all concerned, the company has instituted an award system under which each department is entitled to an award when its employes have worked a total of 5,000 man shifts without a compensable accident.

St. John Ambulance classes are now in session with an enrolment of almost 150 employes and other members of the community.

The company recently installed an American Optical Sight Screener for eyesight testing. This is proving extremely popular as there is no resident optometrist in Ocean Falls and many employes have not had their eyes checked for long periods of time. With proper corrective steps taken, these employes will no longer be a menace to themselves and fellow workers.

The company attributes the success of their campaign to the teamwork of employes, supervisors and unions.

Black Water Benefits Bass

SPRINGHILL, La.—What is believed to be a world's record growth of largemouth black bass during their first five months of life, occurred this past summer in a black water pond of the International Paper Co., near this city, according to Percy Viosca, Jr., consulting fisheries biologist of New Orleans. Mr. Viosca, who was called into consultation by the paper company when fish began clogging their outlet screen, is making an exhaustive study of the fish population of the 260-acre basin.

Largemouth bass raised in the pond since April range in size from 11½ to 12⅜ inches (10 inches is legal size in Louisiana), and in weight from 13 1/10 to 19 1/2 ounces. The average of the largemouth bass found in the basin is just under a foot in length and just over a pound in weight (16⅔ ounces).

Smallmouth bass (the Southern species) and crappie grew more slowly, but still at phenomenal rates. The smallmouths show a greater size range than the largemouths, with a maximum of 10¼ inches, just over the legal size limit, in the five month period. The weight of these is up to 10⅓ ounces, big enough for any frying pan.

Crappie between one and two ounces are in the large majority for this species, but many individuals grew to sizes up to 9½ inches upwards of a half pound.

Mr. Viosca verified his findings by a study of the growth rings on the scales of various species. This study shows that only a negligible number of adult fish have found their way into the basin before the gates were closed. Thus the young of these cannibalistic species had free range without danger of being eaten by their parents or other predators, and whenever hungry, they had abundant food in the form of shiners and young carp which also thrived in the basin.

For five years this impounding basin had been used by the paper company for the storage and purification of waste water. Last April, after most of the waste water had been drained out, a rise in Bayou Bodcau flooded part of the area, and since that time it was filled with bayou water pumped through screens.

Seeking Anti-Pollution Data

APPLETON, Wis.—To assure Wisconsin the benefit of the most recent Swedish and German technical progress in reducing stream pollution, three top technical experts from this state's pulp and paper industry departed on November 1 from New York for Stockholm via Scandinavian Airlines on the first lap of a seven-week flying trip of investigation.

Delegated on this mission by the Sulphite Pulp Manufacturers' Research League of Appleton are: Jesse M. Holderby of Appleton, the League's research co-ordinator; N. L. Malcove, technical superintendent of Northern Paper Mills, Green Bay; and, Frank H. Coldwell, assistant manager of power of Nekoosa-Edwards Paper Co., Port Edwards. Their major objective is to visit the principal Swedish sulphite pulp mills to investigate Scandinavian progress in disposal of spent sulphite liquor.

On arrival at Stockholm the party will be joined by Nils Eklöw, Swedish engineer who spent last summer in Appleton doing research work on the League's sulphite liquor evaporation pilot plant. Eklöw, an expert on this method of spent sulphite liquor disposal, will serve as the mission's guide during their one-month stay in Sweden.

Scandinavian pulp mills have made particular progress in reducing stream pollution by evaporating spent sulphite liquor and burning the residue as fuel. The economics of pulpwood and fuel in Scandinavia differ greatly from these costs in Wisconsin mills, however. Besides finding out how the Scandinavians handle the technical aspects of the task, the three visitors want to check on how and whether it can be matched here at a cost which could be supported by sulphite pulp mills operating under American conditions. Another important phase of the problem is how to control fly ash from this process to avoid air pollution.

After a month in Sweden and Norway, the Wisconsin delegation is going to Germany for an up-to-the-minute check-up on progress in the manufacture of food and feed yeast. Their special interest comes from the fact that Wisconsin sulphite mills last year built at Rhinelander and started operation of a half-million dollar experimental plant which uses torula yeast to consume the wood sugars contained in spent sulphite liquor and then dries the yeast as a vitamin-rich supplement for poultry feed and dog food. Wood sugars are the principal offenders in reducing dissolved oxygen in rivers polluted by suplhite mills, and thus impairing conditions for fish and other aquatic life.

Mr. Holderby, who is also general manager of the Rhinelander yeast project, last visited the German yeast in-

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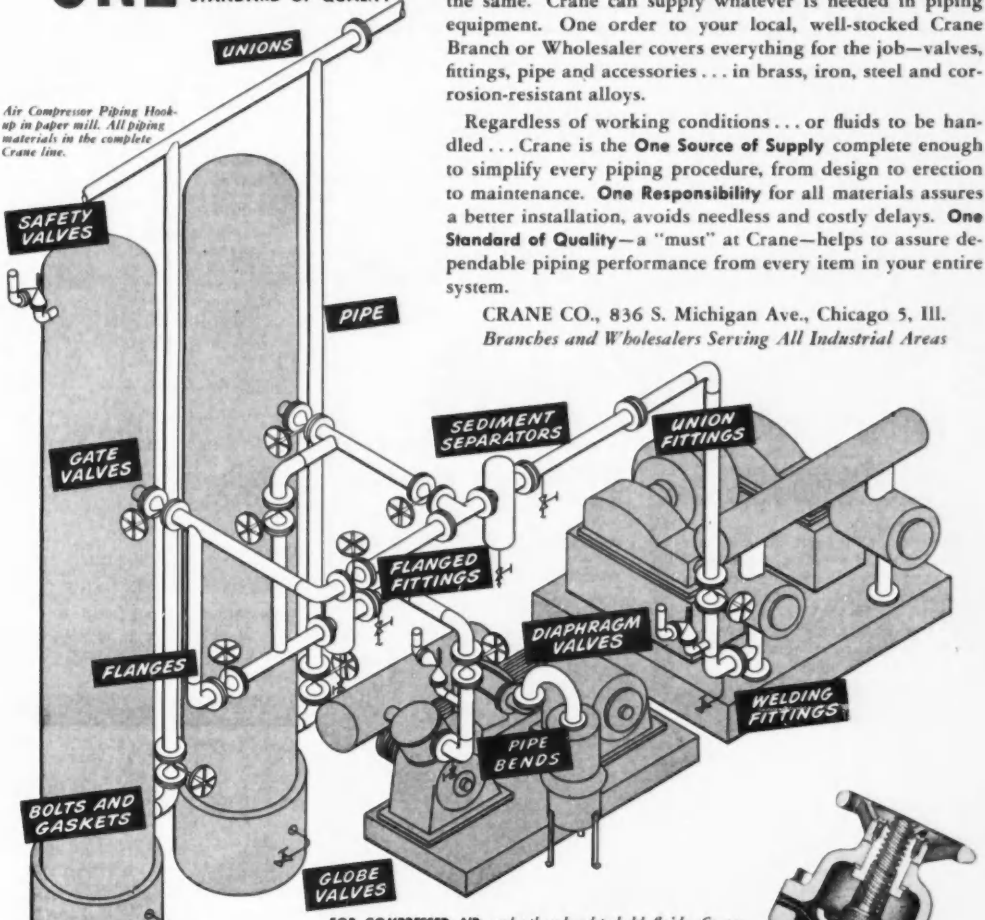

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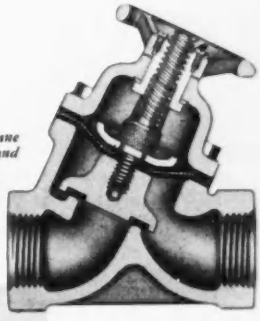

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dustry in 1946. The Germans developed yeast during the war as a source of vitamins in which their human and livestock diets were deficient, at the same time that Wisconsin paper industry scientists were developing their technique of propagating similar organisms primarily to reduce the sources of stream pollution.

Following the German trip, the Wisconsin men will go to London to bring themselves abreast of British developments with torula yeast. Much early laboratory work in this field was done by British scientists. Also, a British firm is making torula yeast from sugar wastes in Jamaica to supplement human diet deficiencies in some British colonial possessions.

Messrs. Coldwell, Holderby and Malcove expect to return home shortly before Christmas.

Mrs. Warner Addresses AIA

TUSCALOOSA, Ala.—Mrs. Herbert D. Warner, president of the Gulf States Paper Corp., was a principal panel speaker at the annual convention of the Associated Industries of Alabama on October 27. She discussed "We, the Stockholders," at the morning session on a panel with former Governor Frank M. Dixon; Representative Thomas A. Johnston, III, of Mobile; Luther B. Bewley and Charles L. Bromberg of Birmingham. Speaker at the banquet ending the meeting was Curtis E. Calder, chairman of the board of the Electric Bond & Share Co., New York.

Officials of the Gulf States firm who attended the convention, in addition to Mr. and Mrs. Warner, included Mr. and Mrs. W. E. Penfield, Mr. and Mrs. H. H. Yoder, Mr. and Mrs. Jack W. Warner, James W. Mustin, Jr., W. C. Washburn, Wagner P. Thielens and W. G. Reynolds.

C-Z's Vicary Retires

SEATTLE—E. H. Vicary, manager of the central engineering division of the Crown-Zellerbach Corp'n., retired on November 1 under the corporation retirement plan after 30 years' service. W. J. Lowndes, his assistant, succeeds him with the title of chief engineer of the central division. R. P. Hutchinson succeeds Mr. Lowndes. Headquarters will remain in Seattle. Mr. Vicary has been retained by Crown-Zellerbach on a consulting basis. He will also do general electrical consultation work.

Legion Honors Crown Willamette

CAMAS, Wash. — Crown Willamette Paper Co's., employment policies were honored recently when the American Legion presented its "Certificate of Appreciation" to the firm for its record of hiring veterans and finding jobs for the disabled.

Herbert A. Davis, Legion department commander, presented the award to George Charters, assistant resident manager of Crown Willamette.

Figures speak for themselves as regards this veteran employment policy, Mr. Davis pointed out. Out of 801 employes who left the company for military service, 502 returned to their jobs.

Out of the 600 veterans now employed by the company, 75 who are disabled have been placed on jobs suited to their capacities.

This employment policy dates back to the first days following the war, Mr. Davis stated.

I-M P & P Co. Buys Mill Site

COEUR D'ALENE, Idaho — The Idaho-Montana Pulp & Paper Co., late in October exercised its option on 180 acres of millsite land on the Spokane River, adjoining the Ohio Match Co., and purchased it from Robert Lang of this city for $25,000. Bids for clearing the site will be called on November 24, W. F. Emory, president, said. L. A. DeGuere of Wisconsin Rapids, Wis., is consulting engineer for the complete project.

Fredlund Heads Valley Traffic Club

WAUSAU, Wis.—Henry F. Fredlund, traffic manager of Nekoosa-Edwards Paper Co., Port Edwards, Wis., was elected president of the Wisconsin Valley Traffic Club at a meeting here on October 19, succeeded S. F. Philpot, division superintendent of the Milwaukee Road, as head of the organization.

Moving Central Fibre Gen'l Offices

QUINCY, Ill.—Central Fibre Products Co., Inc., will remove its general offices on November 14 to 901 South Front street. The sales and traffic departments will remain in the present location at 111 West Washington street, Chicago.

ARCHIBALD R. MARTIN

—former Robert Gair Co., employe in Brooklyn, N. Y., (1907-17) was elected president of the Gair Old Timers at their recent 17th annual banquet at the New Yorker hotel, New York . . . Now owner of the Robertson Martin Advertising Co., Mr. Martin has been an active member of the Gair Old Timers since its inception . . . Elected vice-president of the group was Theodore Kamish, sales manager of Gair Bogota Corp., Bogota, N. J. . . . John Coakley of Eastern States Carton Division, another Gair subsidiary, was re-elected secretary-treasurer . . . Honorary president for the coming year is John Pabst of the Piermont Plant.

Thilmany's Collins Visiting Europe

NEW YORK—T. T. Collins, Jr., chief engineer of the Thilmany Pulp & Paper Co., sailed with Mrs. Collins on the Queen Elizabeth on November 5 for a two-month tour of Scandanavian kraft pulp and paper mills. After visiting Finland, Sweden and Norway Mr. and Mrs. Collins will go to France, Germany and England.

Durkee Farewell Dinner

LYONS FALLS, N. Y. — Fifty men from the Gould Paper Co., tendered a farewell dinner here on October 28 to Charles Durkee, Sr., who is leaving to take up a new position with the St. Regis Paper Co., at Deferiet, N. Y. Mr. Durkee was presented with a gift of luggage.

Sabin-Robins Buys Atlanta Building

ATLANTA—Sabin-Robins Paper Co., has purchased a two-story brick building at 190-192 Walker street, S.W., from the Knight Brothers Paper Co. Herbert D. Gilchrist, Atlanta manager for Sabin-Robins, said his firm will use the structure for sales and distributing.

Consolidated Plans Sewer

CAP DE LA MADELINE, Que.—Consolidated Paper Corp., Ltd., will lay a sewer in the St. Lawrence River here on a beach and deep water lot located in front of Lots Nos. 109-2 and 110-3.

Pennington on Executive Committee

CHESTER, Pa.—Hayes Pennington of the Scott Paper Co., has been elected to the executive committee of the Delaware County Industrial Club.

Scott Man for 26 Years

CHESTER, Pa.—Louis Taylor recently completed 26 years of service with the Scott Paper Co.

FORESTRY

Costs Down, Wages Up

MINTER, Ala. — George H. Hean, director of pulpwood operations for the Dallas Wood Products Co., has initiated some profitable labor procedures in the company's pulpwood operations.

In general, he states, pulpwood production depends on a large quantity of unskilled, low-cost labor. Since there was no quantity of labor available, it was necessary to evolve a method of high production with less labor, necessarily a good class of labor.

He formed a unit of seven men around two good light-weight chain saws. This unit, having been suitably trained, are sold on chain saws, do an excellent job operating them, and produce an average of 22 cords a day in fair timber, selective cut. They are paid on a piecework basis at the rate of $30 per car, and make about six dollars per man per day. Some of these saws have been operating for six months, continuously.

The method, Mr. Hean said, involves the use of two men with a

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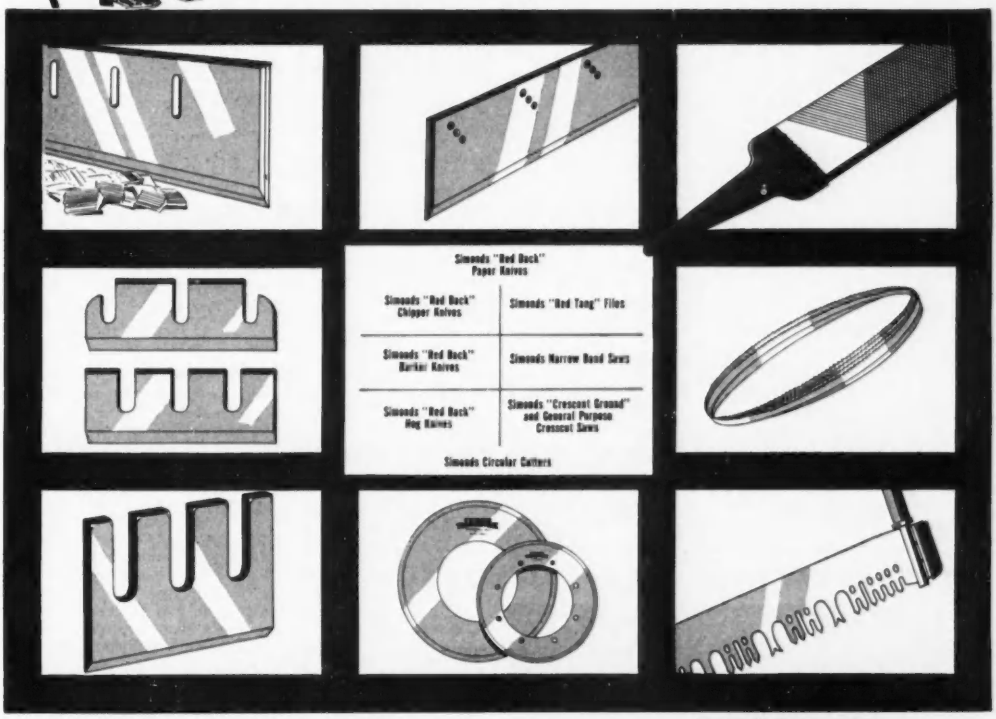
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straight-blade chain saw, felling. In about four hours per day, they can fell enough timber to enable them to change to a bow and cut-up, having felled sufficient timber to keep two saws running all day. Another team of three men follows the felling crew with a bow saw, cutting up continuously. Two men operate the saw, one measures and throws out. In addition, there are two limbers, making the crew of seven. One of these limbers changes over and marks at the time the straight blade saw is converted to a bow and begins to cut up. They attempt to do very little piling or grouping of the wood. The trucks pick it up where it is cut.

Mr. Hean points out that each man realizes his earning capacity will drop considerably if one man of the seven-man group is absent, or does not carry his share of the work. Therefore they have eliminated absenteeism and unproductive workers by eliminating the undesirable men and supplying desirable workers in their places. In this connection, they do not have to do any hiring or firing. The group takes care of this.

"This method may vary," says Mr. Hean. "The straight blade saw may operate continuously, and two bow saws follow it, by the addition of one more saw. We are going to try this, with the addition of three men, and see how it works. This method should produce in excess of two cars per day. It may be necessary to add four men, an extra limber. We must determine that as we go along. However, the method above is holding our labor costs to $1.80 per cord, and paying our men above the average in wages."

N. F. Wood Cut Reduced

OTTAWA — Both Anglo-Newfoundland Development Co., and Bowaters Pulp & Paper Mills, Ltd., have reduced their wood cut in Newfoundland and the work provided usually for loggers has been reduced accordingly.

Forestry College Broadens Course

SYRACUSE, N. Y.—Six new courses in the department of pulp and paper manufacture are offered in a new optional curriculum inaugurated this fall at the New York State College of Forestry, Syracuse University.

The program, which includes technical education in plastics, is the first of its kind to be given by any forestry college. Two assistant professors of forest chemistry have been added to the faculty to answer the needs of the program which was three years in planning. Additional equipment and space are being provided for the study of plastics and their correlation to paper and wood.

The new courses cover plastics and cellulose technology; plastic properties, design and structure; cellulose and wood chemistry and high polymer chemistry. They supplement the existing fundamental courses in pulp and paper manufacture and cellulose and plastics chemistry.

Twenty-two seniors and nine graduate students have enrolled for training for technical positions in the plastics, cellulose, pulp and paper and allied industries.

Commenting on the program, Dean Joseph S. Illick of the Forestry College said, "with this program our college, in line with its tradition of pioneering forestry education fields, moves to meet the increasing demand from industry for men trained in the technology of cellulose and plastics.

"Study of plastics and high polymers will be integrated and correlated with our long-established studies of wood, paper and forest products," he said.

Responsibility for development of the new program has been assigned to Ralph T. Nazzaro, who with Dr. Conrad Schuerch, Jr., joined the faculty to help teach the new courses. They bring to five the number of men at the forestry college who are handling plastics and forest chemistry instruction.

An expert on high polymers, Dr. Nazzaro turned his experience to wartime research on synthetic polymers at Mellon Institute, University of Pittsburgh. During the war he was also director of rubber laboratories for American Resinous Chemicals Corp., Peabody, Mass.

Dr. Schuerch joined the forestry faculty after two years at McGill University as sessional lecturer and research associate in cellulose and industrial chemistry, then as Harold Hibbert Memorial Fellow.

Challenges Timber Procedures

DULUTH, Minn.—The U. S. forest service will be queried as to plans for 85,000 cords of timber in the northwestern corner of Lake county and part of St. Louis county near Bald Eagle Gabro lake, under action of the county board of commissioners here October 25.

The Fourth District Commissioner, Toimi Ohola, Ely, said he had heard rumors that the timber was about to be sold in one large block. Originally, the area was set aside for sale to small operators, Toimi said.

"The small timber operators have got to be protected," he said.

The Ely commissioner said the area in question is adjacent to large holdings of the Tomahawk Timber Co., which is cutting timber and transporting it to Wisconsin for processing at the mills in that state.

Sixth District Commissioner Richard C. Floyd, Eveleth, called upon fellow commissioners to note that "this is going on in the Superior National forest." Mr. Floyd has been repeatedly questioning the presence of logging industry in the wilderness zone.

Mr. Floyd also called for an investigation into how many logging roads in Superior National forest have been built over St. Louis county lands without the county's permission. Under his move, which was approved by the board, Land Commissioner L. R. Beatty will prepare the report. Mr. Floyd said he was especially referring to the Seven Beavers Lake area north of Dunka and the Birch Lake areas. All the locations are along the east St. Louis county line.

Stabilizing Park Falls Area

SUPERIOR, Wis. — The possibilities for economic stabilization of a 1,828,000-acre block of land in the vicinity of Park Falls are explored in a study published October 20 by the Lake States Forest Experiment Station, St Paul. The author is Howard W. Mayne, of the forest economics division of the station.

Mr. Mayne points out that World War II caused an emigration from the cutover area of northern Wisconsin to city jobs and to the armed forces and that many of these people have not returned, leaving the present

ARBORETUM TREE PLANTING CEREMONY

First tree was officially planted in Canada's Queen Elizabeth Arboretum on October 21 . . . Acting Mayor R. K. Gervin (left) planted the tree, a native Pacific dogwood (Cornus Nuttalli) . . . Paul E. Cooper, chairman, Western Branch, CPPA, made the introductory address.

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population probably at a ten to 20-year low.

Mr. Mayne analyzes the present status and potential productivity of its forests and considers problems of ownership, management, marketing, adjustment of industries to available timber supplies, and opportunities for new industries.

Among possible measures he suggests for improving forest productivity and stabilizing employment opportunities are: (1) consolidation of scattered blocks of publicly owned forests into areas large enough for efficient management; (2) further tax concessions as an incentive to industrial forestry; (3) extreme care in promoting new settlement; (4) cutting practices to bring more timber into the large pole and small sawtimber size classes; (5) regulation of the deer herd; (6) eventual planting of some 100,000 deforested acres; (7) a trained forester in each county owning extensive forest land; and (8) an inventory of all forest lands to obtain dependable information on growth, mortality, and mechantability of timber.

The demand for timber, concludes the study, must be held at no more than present levels for at least two decades if forests are to accumulate growing stock and increase annual growth.

Storm Damaged Timber Sale OK'd

SUPERIOR, Wis.—The state conservation commission on October 27 approved of the disposal of storm-damaged timber in Douglas county at a price of ten dollars per 1,000 board feet for Norway and white pine; three dollars a cord for spruce; two dollars a cord for jack pine and balsam; and one dollar a cord of aspen. Extensive wind damage to timber on county land and lands under forest crop was caused by the storm October 10, which reached hurricane proportions.

Multi-Use, Perpetual Forest Yield

FARGO, Ga.—The Suwannee Division of the St. Regis Paper Co., has begun a multiple use, perpetual yield forest operation in a dense 220,000-acre stand of longleaf yellow pine, nearby. Barring a catastrophe, a variety of wood products — pulp wood, poles and saw timbers — will be harvested from this forest forever. Marc Rawls, veteran forester, is manager of the Suwannee Division.

Mexico Xmas Tree Ban

MEXICO CITY—The Department of Forestry declared on November 1 that it will refuse to grant permits to cut pine trees for Christmas.

ASSOCIATIONS . . .

Technical Section, CPPA

1950 Annual Meeting

MONTREAL—The 1950 Annual Meeting of the Technical Section, Canadian Pulp & Paper Ass'n., will be held at the Mount Royal hotel, January 25-27.

Some of the papers on the tentative program are: Use of the Beckman Flame Photometer at the KVP Co., Ltd., Espanola, Ont.; Jordan Plug Pressure Control; Use of Urea Resins in Wet Strength Paper; Use of the Waco Filter; A Standard Method of Maintenance Costing; A New Color Code Developed by the Engineering Committee; Applications of Rectifiers; Material Handling of Rolls; Groundwood Consistency Determinations; Black Liquor Analysis; Recovery of Waste Heat from Sulphur Burner Gases; and Waste Sulphite Liquor Evaporation — a symposium of three papers.

Delegates are urged to make hotel reservations early. Requests for accommodation at the Mount Royal hotel should be addressed to Clarence K. Dwinell, manager. Date and time of arrival and departure should be provided when making reservations. The Technical Section does not handle room reservations.

Mich. Supt's. Discuss Rubber Covered Rolls For Coating

KALAMAZOO — The October meeting of the Michigan Division of the American Pulp & Paper Mill Superintendents Ass'n., at Hotel Harris, October 20, which drew a registration of 77, was devoted to discussion of rubber covered rolls for coating on the paper machine.

The session stimulated numerous questions that were answered by a panel made up of: R. M. Leighton, Stowe-Woodward, Inc., Newton Upper Falls, Mass.; Glen Sutton, Sutherland Paper Co., Kalamazoo; Louis Scheid, Watervliet Paper Co., Watervliet, Mich.; Harrison Kindig, Mac Sim Bar Paper Co.; Otsego, Mich.; and Al Lutz, B. F. Goodrich Co., Akron, Ohio.

Mr. Leighton, as moderator, said: "To the papermaker, coating on the machine has brought many new problems—such as change of furnish, pigment grinding, plasticizing, viscosity, solids content — and rubber covered rolls. A recent paper indicates that a chemical process using ion exchange is being added to the growing advancement. The methods of coating are many. However, for our purpose, we will simply classify them as direct, offset, and metering by a scraper. The first two methods employ rubber covered rolls; the third, generally does not. To the roll coverers, this situation has brought problems. The different machines are not comparable in the hardness of covers. The range on the different machines run from 10 to 200 ⅜ P.

"It is not unusual for a new operator to think of his rolls as press rolls. However, he soon learns that he is doing a different type of work with his rolls—printing rather than squeezing.

"The roll coverers are keeping pace by developing roll covers that will wear smooth, and will grind and sand reasonably easy. At times, they are somewhat confused on the question of finish. It is quite difficult to know just what surface is acceptable on the first grinding, as different operators have their own standards of surface.

"Several operators order their rolls ground straight, and crown and polish surface when needed.

"Experience has shown that rolls used to apply coating to the sheet must be regarded as printing rolls. The surface must be good at all times or the coating will be marked. This simply means more frequent grinding and polishing to maintain the surface.

"The choice of oils or plasticizers used in the coating often affects the roll surface. Some oils, while not actually attacking the rubber cover badly, will soften the surface so that the abrasive action of the coating can make pit marks in the roll surface. Semi-dry coating can wear the ends quite easily, extending in to the edge of the sheet.

"These remarks relate to just a few of the problems on coating on the machine.

"Now as to rolls in general:

"Some mills keep good records. All mills should. I believe from the records I have seen in several mills that prompt and proper care of rolls can pay dividends in increased felt life, and help to produce a better product. This is especially true on high speed machines where crown and roll balance play an important part.

"A worn crown on a high speed machine can set up serious vibrations —likewise an unbalanced roll. Pressure rolls, due to difficulty in installing and removal, often are run beyond good practice, causing unnatural wear and cracking.

"It is not uncommon in checking crowns on rolls to find that the crown has been moved off-center — on some large rolls 12″ x 15″, showing that the press had been used as a grinder to offset the unbalanced crown or weighing.

"It is our thought that in many instances, due to pushing machines for high production, that not sufficient care has been given to mechanical details, such as alignment, hot journals, proper crowning, leverage system, etc.

"In operating, a roll is crowned to be used, in many instances, over a wide range of paper weights. Experience has shown that such a crown is a compromise and cannot operate 100 percent for each grade, especially when additional weights are added which can change the deflection of the roll, or on one side more than the other. This practice will and can ruin a cover.

"Several papers have been given recently on machine and roll care. One of the most recent was by C. P. Spald-

How HYCAR makes paper "PAPER PLUS"

WATER RESISTANCE

TEAR RESISTANCE

OIL RESISTANCE

CLOTH-LIKE FEEL

...and more!

YOU can broaden your range of paper applications—increase your profits, too—with Hycar American rubber latex. For this versatile material, used as a coating or impregnant, gives paper a whole new list of possibilities.

Hycar not only increases paper's tear and wet strength, but also makes soft but strong, smooth-draping sheets.

Just think of the uses for Hycar-improved paper: protective wrapping, bags, shelf covering, gasketing, tape backing, imitation leather base—to name a few.

Hycar latex may be added to paper before or after sheet formation...or used for modifying other resins in coating or impregnating. It can make phenolics tough instead of brittle. With it, vinyls may be plasticized *permanently*, eliminating plasticizer migration.

Hycar Reg. U.S. Pat. Off. *American Rubber*

And Hycar-based adhesives permanently bond paper—as well as wood, leather, aluminum foil, vinyl films and other materials.

Hycar latex is safe and easy to use. No vulcanization, no explosive solvents, no costly solvent recovery systems are needed. Normal drying times are used.

Let us help you with your applications or problems. Just write Dept. HH-12, B. F. Goodrich Chemical Company, Rose Building, Cleveland 15, Ohio.

B. F. Goodrich Chemical Company A DIVISION OF THE B. F. GOODRICH COMPANY

GEON polyvinyl materials • HYCAR American rubber • GOOD-RITE chemicals and plasticizers

ing of the Beloit Iron Works.

"There have been a number of papers on roll manufacturing which to me have not given much to think over, for the simple reason that few superintendents and engineers enter into the discussion.

"It is obvious that your roll coverer cannot be expected to be a papermaker. Give him all the possible details so that he may have a clear picture of what you want.

"We hope that these remarks have brought to mind some questions on rolls which the panel, with the assistance of the division members, may clarify for you."

Among the questions that came up for discussion by the panel members were the following:

What causes rubber rolls, in some cases, to corrugate on the ends; in other cases, all the way across?

What material is best for a doctor to be used on soft rubber rolls? On hard rubber rolls?

What surface temperature is permissible for coating press rolls? Is 180 deg. too hot?

Is there any practical reason for the use of two methods for determining hardness, i.e., plastometer and densimeter? If not, why not eliminate one or the other method?

What grit of grinding wheel will give the smoother finish for hard rolls with a plasticity of 0–20; soft rolls with a plasticity of 50 and over?

What plasticity is recommended for size press rolls?

What plasticity is recommended for rubber-covered press rolls?

What combination is the better for a board machine — a top press roll with a high plastometer reading and bottom roll hard; or both rolls of the same hardness?

Should the holes in the cover of a suction press be of the same size as the holes in the shell?

Is there any way to stop cupping of holes in a cover?

How can rubber roll marks be eliminated in coating work?

Is there a good way to clean out the holes in a rubber-covered suction press roll without taking out the roll and drilling?

How is the density of covers on suction drum and press rolls determined?

What plastometer readings give the best results on wringer rolls?

The meeting was presided over by W. F. Hathaway, Kalamazoo Vegetable Parchment Co., Parchment, Kalamazoo, Mich., chairman of the division.

North Bend Safety Meeting

NORTH BEND, Ore.—Some 50 representatives of the pulp and paper industry of Oregon met here October 27-28 for the fourth annual labor-management safety conference sponsored jointly by the International Brotherhood of Paper Makers, the International Brotherhood of Pulp, Sulphite and Paper Mill Workers, and Oregon pulp and paper companies belonging to the Pacific Coast Ass'n., of Pulp and Paper Manufacturers.

Delegates from the Crown Zellerbach plant at West Linn were George LaHausen, safety director; R. W. Riley, assistant superintendent; Joe Dupasquier, Papermakers local, and Gordon Jolly, Pulp and Sulphite local. From Publishers' Paper Co., Oregon City were Charles S. Hood, safety director; Ed. Henschel, Paper Makers local, and Hazel Barnard, Pulp and Sulphite local.

Speakers at the conference included Paul Gurske, chairman of the Oregon Industrial Accident Commission; Robert S. Wertheimer, Longview, Wash., secretary of the Pacific Ass'n., of Pulp & Paper Manufacturers; John R. Jones, Albany, N. Y., first vice-president of the I.B.P.M.; C. Wylie Smith, vice-president and manager of the Coos Bay Pulp Corp., Empire. Panel discussions on safety subjects by labor and management representatives featured the gathering.

Also on the program will be Robert M. Evenden, Salem, director of the Accident Prevention division, Industrial Accident commission, who spoke on "The Accident Prevention Pattern Being Set by the Pulp and Paper Industry"; and Robert S. Boaz, Seattle, of the Personnel Development Service, on the "How and Why of Safety Training" and "Demonstration of Conference Technique." T. Morris Dunne, employer representative of the Accident commission, was also on the program.

George LaHausen, safety supervisor at Crown Zellerbach Corp'n., West Linn, was general conference chairman. Presiding over the discussions as co-chairmen, was John Sharman, Tacoma, vice - president of the I.B.P.M., and other international representatives of the two unions.

Oregon pulp and paper mills represented at the conference included. Coos Bay Pulp Corp'n., Empire; Publishers Paper Co., Oregon City; St. Helens Pulp & Paper Co.; Fibreboard Products, Inc., Portland; Weyerhaeuser Timber Co., pulp division, Springfield; and the Crown Zellerbach Corp'n., plants at Lebanon and West Linn.

AFPI Elections

WASHINGTON—N. F. McGowin of the W. T. Smith Lumber Co., Chapman, Ala., was named as president of American Forest Products Industries, Inc., at the recent meeting of the organization here. He succeeds Sydney Ferguson, president of the Mead Corp'n., New York, who headed A.F.P.I., for the past two years.

Others named by the board of trustees at the annual meeting included; Walter J. Damtoft, Champion Paper & Fiber Co., Canton, N. C., vice-president; Clyde S. Martin, Weyerhaeuser Timber Co., Tacoma, vice-president; P. H. Glatfelter of the P. H. Glatfelter Co., Spring Grove, Pa., treasurer; Col. William B. Greeley, Seattle, chairman of board; and Charles A. Gillett, Washington, D. C., secretary.

New members of the board of trustees named for three-year terms are: Charles H. Sage, Kimberly-Clark Corp'n., Neenah, Wis.; Fred Dierks, Dierks Lumber & Coal Co., Kansas City, Mo.; W. S. Lucey, Rayonier Inc., New York, all replacing Stuart B. Copeland, Northwest Paper Co., Cloquet, Minn., M. L. Fleishel, St. Joe Lumber & Export Co., Port St. Joe, Fla.; and William D. Welsh, Crown Zellerbach Corp'n., San Francisco.

Named to fill 3-year and 1-year terms on the board of trustees were W. O. McKay, Great Northern Paper Co., Boston, and D. B. Frampton, of the D. B. Frampton Co., Columbus, Ohio, while Alexander Calder, Union Bag & Paper Corporation, New York; Leonard G. Carpenter, Shevlin-McCloud Lumber Co., Minneapolis; and Mr. Martin of Weyerhaeuser, were re-elected to three-year terms.

IFT Decennial Conference

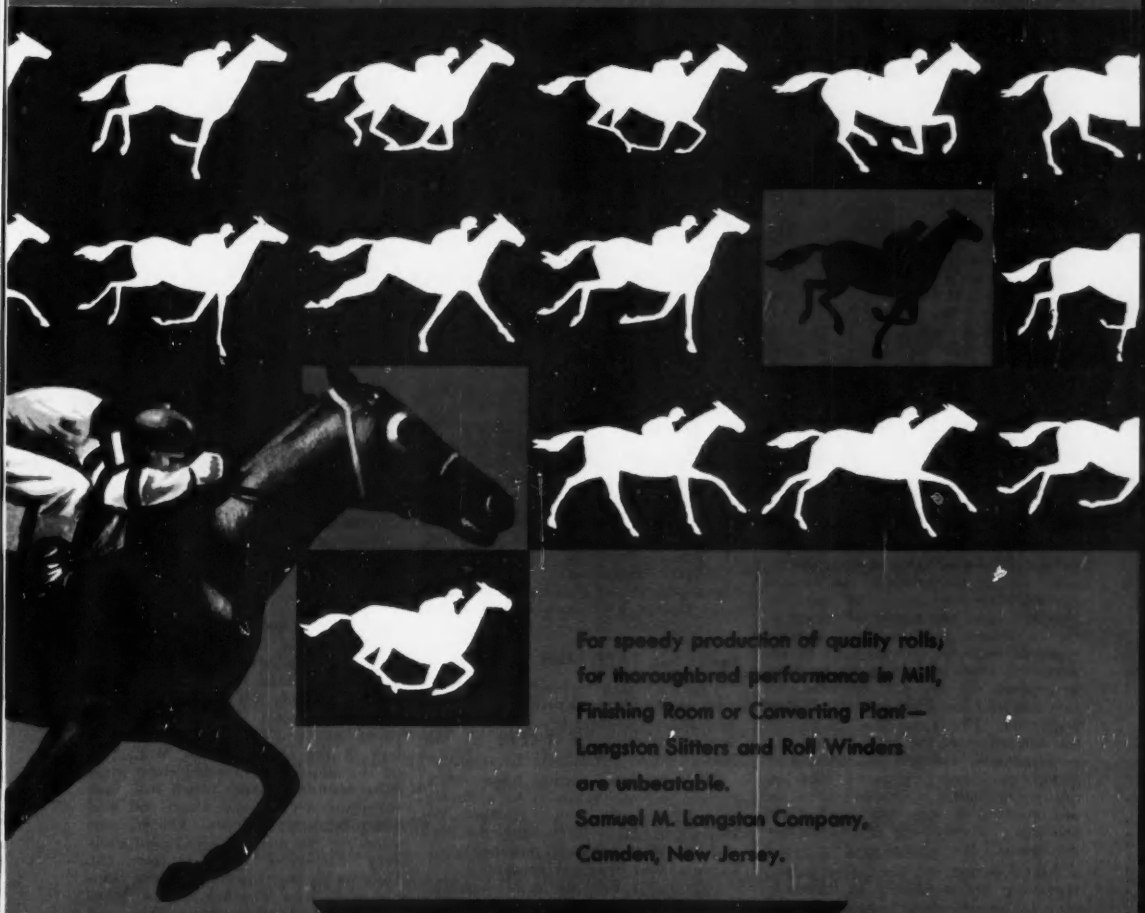
CHICAGO—C. L. Smith and L. E. Clifcorn of the Continental Can Co., are among trade executives actively aiding in arrangements for the IFT Decennial Conference to be held at the Edgewater Beach hotel, May 2-25, 1950. The Chicago Section of the Institute of Food Technologists is host to the National Society for the conference. The first one was held in Chicago in 1940 when IFT had a membership of about 700 food technologists and has since grown to approximately 3,000 members.

Purpose of the gathering is to create broader appreciation of the roles food technologists have assumed and are prepared to extend in the development of food industries and the national economy. To emphasize past and potential capabilities, no technical sessions will be held on the afternoon of May 23 (following the luncheon for their business guests) in order to permit uninterrupted inspection and review of exhibits. The exhibits will be kept open for inspection and personal conferences during the time of any scheduled, technical, or general session from the opening of the program on May 22 until its closing on May 25.

Madden, Nov. 14 SAPI Speaker

NEW YORK—James Madden, president of The Hollingsworth & Whitney Co., will speak on "Some of the Economic Geographic Factors Which are of Influence in the Development of The Paper Industry" at the meeting of the Salesmen's Ass'n., of the Paper Industry at Midston House at noon, November 14.

pacemaker: *one that sets the pace for another*



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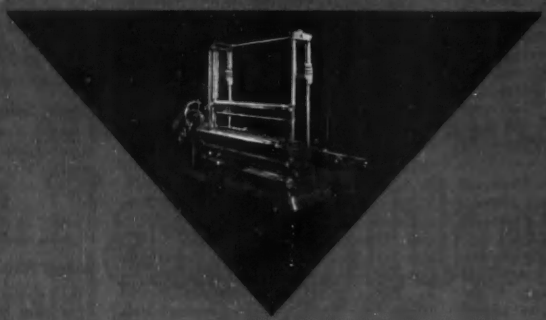

Langston

SLITTERS AND ROLL WINDERS

FPRS Holds Fall Session

NEW YORK—Fall meeting of the northeast section of Forest Products Research Society convened at Hotel Statler, October 31 and November 1 with some 60 members attending the opening session.

Dr. K. A. Taylor, director of research, International Paper Co., presided for the first assembly which heard F. Powell Forbes, manager, Engineering and Fabrication Division, Weyerhaeuser Timber Co., Newark, N. J. tell some of the things his company has done towards "The Integrated Utilization of Forest Products" in Pacific Northwest operations.

"Basically, forest utilization begins in the forests," Mr. Forbes said. "It would be of little use to establish mill sites and spend money for product and market research only to find that the operation would be of short duration due to the depletion of the forests. Therefore it is necessary to insure that the forests will yield the perpetual crop required by the market and will furnish long-term continuous employment for the workers. A wide variety of sizes, grades and species of logs are harvested, and the diversity of manufacturing carried to the lengths necessary to utilize the products of the harvest to full advantage . . . In addition, some methods must be employed to use the inevitable sawdust and planer chips resulting from the cutting, trimming and planing operation. . . . By utilization of the various species, sizes and grades of logs, the constant fight for higher efficiency in the processes, grouping of various types of mills on one mill-site to reduce the cost of transportation, the by-product of one mill becomes the raw material for another," Mr. Forbes explained. The Longview, Washington operation is the most widely diversified mill, and typifies the idea of grouping different types of mills on one site in order to convert all sizes and species of logs into marketable products. "Everything is utilized but the squeal," Mr. Forbes said.

Asked during the discussion period regarding the possibility of adapting such an integrated utilization program to New England's wood waste, Mr. Forbes stressed the importance of grouping of various types of mills on one mill-site. Where transportation is the problem which has to be coped with, such a program as Weyerhaeuser's would not be economically practicable, he believed.

George I. Fischer of U. S. Plywood Corp'n., presented the subject "Wood and Paper Laminates" basing his talk on paper "Wood and Paper as a Combination Material" prepared by Boardman M. Randall who was unable to attend. The selection of woods in use as veneers with kraft cylinder paper, the various processes of manufacture, comparative tests for resistance to puncture, etc., were explained in Mr. Randall's paper and elaborated on by Mr. Fischer. The finished product, marketed as "Techwood" is in wide use for toys, shipping containers, pallets, etc. The Company's similar product, Protechwood, impregnated with asphalt and rosin to be water-resistant, also was described as "rodent-repellent."

Supplementing the paper "The Manufacture of Kraft Fibreboard for Shipping Containers" by W. S. McDonald of International Paper Co., was a color film on production at the Springhill mill, Southern Kraft Div., which was presented by E. B. Pettisson of International, and followed the business meeting over which W. Burdette Wilkins presided.

Sound Film "Mahogany . . . Wood of the Ages, Yesterday, Today and Tomorrow" was presented by George N. Lamb of the Mahogany Assn., following luncheon, and brought the morning session to an end.

The Imported Wood Clinic occupied the afternoon session, C. F. Van Epps presiding, Robert W. Hess of Yale University, moderator. Wood Moisture Relations Clinic occupied the Tuesday morning session discussing "How Water is Held in Wood"; "Movement of Moisture in Wood"; "Fiber Saturation Point, Equilibrium, Moisture Content, and Hysteresis"; "Shrinkage and Drying Stresses."

Closing session at 2 o'clock included Special Interest Groups on "Seasoning of Wood Products"; "Machining"; "Material Handling"; "Glues and Glueing"; "Wood Finishes." Adjournment was at 3:45 Tuesday afternoon.

Pacific Sec. TAPPI Meet

TACOMA — Representatives from all parts of the Pacific Northwest were in attendance October 25 at the Pacific Section meeting of TAPPI at the Towers.

The afternoon session began at 2 o'clock and was followed by a dinner at 6:30 p.m., at which Howard W. Morgan, manager of the pulp division of the Weyerhaeuser Lumber Co., Tacoma, was principal speaker.

The subject during the afternoon was "Instrumentation." Speakers were introduced by L. F. Mayback, Crown Zellerbach Corp., Camas, Wash.

Speakers included Fred Thompson, General Electric Co., Seattle, on "Electronics in the Paper Industry"; Howard C. Hall, Crown Zellerbach Corp., Camas, "Control on Paper Machines"; Wallace Sawyer, Portland, "Basis Weight Control on Paper Machines"; H. T. Peterson, Weyerhaeuser pulp division, Longview, "Consistency Control Using the Photoelectric Cell"; Forrest Williams, Crown Zellerbach Corp., Camas, "Sulphur Level Control in Rotary Sulphur Burners"; and Brian L. Shera, Pennsylvania Salt Mfg., Co., Tacoma, "Measurement and Control of Chlorine." S. P. (Ted) Strayer, St. Regis Kraft, Tacoma, was chairman of the day.

APPA Convention, Feb. 19-24

NEW YORK—The 1950 Annual Convention of the American Paper & Pulp Ass'n. and affiliated divisions has been arranged for February 19-24th, inclusive, at the Waldorf-Astoria hotel.

As usual, a number of APPA industry committees will meet and many of the divisional Associations will hold their annual business meetings, elect officers, and transact other business.

The Annual Dinner will be held on Thursday evening, February 23, and the Salesmen's (SAPI) luncheon Tuesday noon, February 21. The Executive Committee of APPA voted at a recent meeting to set aside one half day for an Overall Industry Meeting, and this has been arranged for Thursday afternoon, in the Starlight Roof room. A panel of industry speakers will discuss industry problems during that period.

A block of rooms has been set aside for the Association by the Waldorf-Astoria management and as long as they last these rooms will be assigned to members of the Divisional Associations, if they will write the Waldorf, on their business letterheads. The Belmont Plaza Hotel will also make reservations. Rooms at the Shelton hotel can also be had.

The Languild Convention Service, 14 Washington Place East, New York 3, N. Y., will procure theatre tickets for APPA members for a small fee, if desired.

Reservation blanks for the dinner of the Association and for the SAPI luncheon will be mailed shortly after January 1.

Miami Valley Supt's Meet

MIDDLETOWN, Ohio — The first Fall meeting of the Miami Valley Division of the American Pulp & Paper Mill Superintendents Ass'n., was held at the Manchester hotel, October 27, when a paper was presented by R. W. Polleys of the Downingtown Mfg., Co., on the subject of non-deflecting press rolls, suction cylinder couch roll, fuzz collecting doctors and direct roll load controller and recorder. The 63 men attending the meeting also heard some very interesting remarks from the Division's new chairman for the coming year, Kon Matchuk of the Maxwell Paper Co., Franklin, Ohio, and the new program chairman, John Burdsall of the Crystal Tissue Co., Middletown.

Fraser, Spicer, Newest SAPI's

NEW YORK—Recently admitted to membership in the Salesmen's Ass'n., of the Paper Industry, are: Paul B. Fraser of the Hollingsworth & Whitney Co., New York; and Glenn R. Spicer of the Chicago office of the Hammermill Paper Co.

Bishop Named Executive Secy.

LUFKIN, Texas — President R. W. Wortham, Jr., of the Texas Forestry Ass'n., reports the appointment of Loren L. Bishop as executive secretary. Permanent offices of the association will be opened here. Mr. Bishop

Poor Old Bill AND Lucky Joe

Bill is a good worker. He made big wages while paper was in short supply. His mill is down now. Bill is laid off. Poor old Bill!

Joe is a good worker, too. He makes steady wages all year round. Never heard of a buyer's market. He doesn't have to worry. Lucky Joe!

There are too many "poor old Bills" among employees of high-cost mills—and slow drying makes high costs. Too much water remains in the sheets after they leave the presses. Too much heat is needed at the drier rolls. When machines go slow costs go up—and mills go down.

There are plenty of "Lucky Joes", too. They work at low-cost mills where presses are equipped with Hamilton Felts. There is not much water left in the sheets by the time they reach the driers. Little heat and little time needed to finish them. Machines go fast—costs go down and pay-rolls go steady.

SHULER & BENNINGHOFEN, HAMILTON, OHIO

Miami Woolen Mills

Hamilton Felts

Established 1858

was with the federal forest service for 35 years. From 1934 to 1948 he negotiated the purchase of all federal forest lands in Texas. For the past two years he has been an official of the occupation forces in Japan on forestry matters.

The annual meeting of the Association will be held on December 2.

Lake Erie Group Sizing Meet

CLEVELAND—The second meeting of the newly-organized Lake Erie Papermaker's and Converter's Ass'n., will be held on November 18 at the Hickory grill, 929 Chester avenue. Cocktails will be served from 6 to 7, dinner at 7:15, and the meeting will open promptly at 8:15.

The meeting will feature an open discussion of paper and paperboard sizing. W. O. Manor of the Consolidated Paper Co., is chairman of the program committee and will open the discussion with a talk entitled "How Sizing Affects You." He will be followed by P. F. Neumann of the Hercules Powder Co., speaking on "Use and Theory of Sizing," and R. L. Leaf, Jr., of the Ohio Boxboard Co., on "Tests for Sizing of Paper and Paperboard." After these talks, the subject will be up for discussion by the members and guests.

Reservations and requests for further information should be addressed to Wm. Schoenberg, secretary-treasurer, LEPCA, Room 105, 1200 West Ninth street, Cleveland 13, Ohio. Membership or attendance does not require membership in any other local or national group.

Technical Section, CPPA
1950 Summer Meeting

QUEBEC—The 1950 Summer Meeting of the Technical Section, Canadian Pulp & Paper Ass'n., will be held at the Chateau Frontenac hotel, May 31–June 2. Hotel reservations will be handled through George Jessop, manager, Chateau Frontenac.

The Joint Fundamental Research Conference, sponsored jointly by Fundamental Research Committees of TAPPI and the Technical Section, CPPA, will be held at the Chateau Frontenac the two days immediately preceding and during the first day of the 1950 Summer Meeting. Papers and discussions on the papermaking characteristics of various fibres will be programmed for this joint meeting.

MISCELLANY . . . .

Gifts for McCracken Hall

KALAMAZOO—McCracken Hall of the Western Michigan College opened October 28 with a miniature paper mill set up on its ground floor. The school's new department of pulp and paper technology is housed here and begins its second school year. Much of the equipment was contributed by the paper industry as an aid to teaching technical subjects.

Dr. Alfred Nadelman, who is in charge of the pulp and paper curriculum, estimates that more than $25,000 in equipment is needed to conduct the course properly. Most of the equipment has already been pledged and much has arrived, he added.

Included is a Noble & Wood sheet machine (already installed) which produces paper eight by eight inches in size, and is designed to determine the strength and character of pulp in the process of manufacturing. The cost of the machine, $3,200, was a gift to the college.

Other gifts are an MIT folding endurance tester and a micrometer to gauge paper thickness.

Funds Voted for Minn. Survey

GRAND RAPIDS, Minn.—At an executive session here following a conference of representatives from 16 northeastern counties, the Iron Range Resources and Rehabilitation committee voted to allow $20,000 for the 16-county land use program of zoning and taking inventory of timber products. A total of $30,000 was alloted for a geographical survey of the Iron Range districts, including the Mesabi and Cuyuna ranges. For this the commission pays 50 percent and the federal government pays 50 percent and the work is done by the federal government.

State Senator George O'Brien, chairman of the IRRRC, presided. Attending the executive session were Ben Constantine, Eveleth, commissioner of the IRRRC; Chester Wilson, St. Paul, head of the conservation department; State Senator Herbert Rogers, Duluth; State Senator Thos. Buklich, Gilbert; Fred Schwanke, Deerwood; Representative Charles Root, Minneapolis and Representative Emil Ernst, Lester Prairie.

ECA Names Swanberg

WASHINGTON — The Economic Cooperation Administration on November 6 reported in Washington and Stockholm the appointment of Curt Oscar Swanberg, management engineer of Summit, N. J., as Industry Officer to its mission in Sweden.

Mr. Swanberg, 52, has had extensive engineering experience here and abroad. He recently returned from a special engineering mission to Yugoslavia for the International Bank for Reconstruction and Development. In 1947 and 1948 he served as a consulting engineer for the state of Holkar in India. In 1938 and 1939 he worked in Sweden as a consulting engineer on plant improvements for the Cooperative League at Stockholm. He was born in Sweden, educated both there and at Columbia University.

Austrians Studying U. S. Logging

WASHINGTON — Two Austrian logging experts, who are making a three-month study of the use of modern equipment in the American logging industry, left here November 3 for Portland, Ore., the ECA reports.

Since their arrival in the United States on October 27, the two Austrians, Dr. Peter Handel-Mazzetti and Arnold Elsaesser, have been in Washington conferring with ECA and Forest Service officials of the Department of Agriculture. This is the first ECA technical asistance project approved for Austria.

Following is the Austrians' tentative itinerary to November 18: November 6-13: Observations of logging operations, Portland, Ore., with representatives of Forest Service, U. S. Dep't. of Agriculture; November 14-16: Pacific Logging Congress Convention, Seattle; November 17-18: Western Pine Ass'n., Seattle.

Congress Clears Hoosac Control

NORTH ADAMS, Mass.—Paper manufacturers were notified by Congressman John W. Heselton (R-Mass.) on October 11 that both Houses of Congress have finally agreed to begin federal flood control works on the Hoosac River here, after 20 years of pleading for adequate protection against flood losses, leaves only President Truman's signature necessary to permit a $700,000 start in this city and Adams on a long-range program that eventually will cost $20,000,000, according to present estimates of the Army Engineers.

Chaudiere Falls Redevelopment

OTTAWA—First move in redevelopment of nearby Chaudiere Falls will be carried out by Ontario Hydro next year in cooperation with Quebec Hydro, with at least 100,000 hp. being the output after the two systems have acquired the Chaudiere water lots from the E. B. Eddy Co., and J. R. Booth Co., the Bronson Co., the Ottawa Transportation Commission and the Ottawa Hydro ommission. It is believed that Ontario Hydro may build a giant power house as part of the project.

OIT Decontrol Expanded

WASHINGTON—Condenser tissue and capacitor tissue were among articles removed from export control in an action by Office of International Trade last week. Also removed was book cloth, pyroxylin-coated or impregnated, and various Manila and abaca fibers, yarns and cordage, except cotton or jute. Also removed were rayon and special chemical grades of bleached sulfite wood pulp.

Labor Disputes Erase 19,000 Days

OTTAWA—Canadian Government reports that 19,000 man-working days were lost through labor disputes in the pulp and paper products manufacturing industries of Canadia during August this year. Only 100 man-working days were lost in labor disputes during this period in the logging, lumber and its products industry.

Would Simplify Customs Procedure

OTTAWA — H. R. Kemp, the Canadian Government's tariff expert in the Department of Trade and Commerce, is in Washington to discuss ways and means to ease U.S. customs procedure, it is learned, with the objective being to make it easier for Canadian exporters to get their supplies into the United States. A. F. W. Plumptre, economics chief in the External Affairs Department here, is expected to join in these discussions with U.S. officials.

ECA Authorizations

WASHINGTON, D. C.—Paper procurement under ECA authorizations, reported during the week ended October 31 included $40,000 for Iceland, to be obtained in this country, and a decrease of $13,000 in pulp and paper products authorized earlier for Ireland, for procurement in Canada.

Can. Paper Makings to Britain

OTTAWA—Imports of paper-making materials into Britain from Canada during September this year reached $1.48 million, bringing the total to date to $13.86 million as compared with $14.8 million for the first nine months of last year, according to official sources here.

H. G. Munro Advanced

VANCOUVER, B. C.—H. G. Munro has been elected vice-president of B. C. Forest Products, Ltd. He is also general manager of the company.

Open New Waste Paper Plant

SHREVEPORT, La. — Shaffer-Stein Corp'n., has opened its new waste paper plant on Aero Drive.

AMA Business Financing Meeting

NEW YORK — Corporation finance problems raised by current trends in profits, world trade, taxes, industrial pensions, and the need for equity capital will be discussed at a meeting of the American Management Ass'n., at the Waldorf-Astoria hotel, December 1-2.

Subject matter for the conference was determined by a survey of more than 1,000 corporate finance officers. The survey showed concern with these questions: (1) Factors involved in changing economic conditions which will have profound influence in the development of the American economy and with which the finance executives must ultimately contend at the operating level in management. (2) Finding adequate funds to permit effective employment of men, materials and machines to maintain profits. (3) Improving financial controls within the company to permit evaluation of company performance on a day-to-day basis to meet profit goals. (4) Financing aggressive foreign trade at a time when foreign currency devaluation, trade restrictions, the Marshall Plan and ECA measures "have combined to make of the foreign commerce picture a confused kaleidoscope of conflicting problems." (5) Assessing the impact of the pension demands of labor on corporate financial planning. (6) Analysis of present taxes and possible changes in tax legislation and their ramifications in both long and short range planning by management.

Among discussion leaders at the five sessions of the two-day conference are Marion B. Folsom, treasurer, Eastman Kodak Co.; Keith Powlison, vice-president and controller, Armstrong Cork Co.; and T. C. Davis, treasurer, E. I. du Pont de Nemours & Co., Inc.

A special session will be devoted to discussion of satisfying the need for management information by sources of equity capital. This six-man panel will include Emery N. Cleaves, assistant to the president of the Celanese Corp., of America, New York.

Canadian Employment Statistics

OTTAWA — Male employes formed 94.9 percent of the total in the pulp and paper industry in 1948, the Canadian Government reports, adding that 6,171 were paid on a salary basis and 43,125 were wage-earners. Of the female employes, numbering 2,628, a total of 1,895 received salaries. The amount paid in salaries during 1948 was $30,459,864. Payments distributed to wage-earners totaled $121,202,897. The average number of employes in this industry was 51,924, an increase of four percent over the preceding year.

Salaries and wages paid totaled $151,662,761 or 17.1 percent more than in 1947.

Employes in Quebec numbered 23,894, with a total payroll of $69,147,780. Ontario gave employment to 17,674 workers who received $51,776,145. British Columbia paid $15,747,555 to 5,036 persons and the 5,320 employes in Nova Scotia, New Brunswick and Manitoba received $14,991,281.

Employment, salaries and wages in the pulp and paper industry for 1948, by provinces, in the table below, with 1947 figures being given in brackets.

To Discuss N. E. Power Potential

WASHINGTON — The power potential of the New England states is scheduled to be a major topic at the New England Democratic Regional Conference, at Boston, November 20-21, it is learned here.

Despite the political aspects of the meeting, which may draw the presence of either the President or Vice-President, an important part of the schedule includes the New England power panel, which will be conducted by Secretary of Interior Krug, according to present plans.

Leading up to this more formal and detailed consideration of the matter, there has occurred some exchange of views between Interior Department officials and authorities in Massachusetts, over the question of whether the state's full power capacity has been realized.

Assistant Secretary of Interior Davidson believes the undeveloped power potential of New England is around 3,000,000 kw. It is understood that some New England authorities do not agree with this figure, contending that a considerable part of the potential has already been brought into production.

Fewer Wis. Industrial Injuries

MADISON, Wis.—Injuries in the paper and allied products industries in Wisconsin averaged 3.2 per day in September, compared with 4.1 per day in the corresponding month of 1948. Injuries in the industry averaged 2.8 per day for the cumulative period, January-September this year. For the same period in 1948, there were 3.7 per day.

NAM on "Valley Authorities"

NEW YORK—The recommendation of the Timber, Soil & Water Conservation Committee of the National Ass'n., of Manufacturers on "Valley Authorities," approved at the October 25-26 meeting of the NAM directorate, has been circulated by the American Paper

Employment, Salaries and Wages

Canadian Pulp and Paper Industry, 1948-47

(1947 Figures in brackets)

	Employment (No.)		Male (No.)		Female (No.)		Salaries and Wages ($)	
Canada	(49,946)	51,924	(47,272)	49,296	(2,674)	2,628	(129,477,995)	151,662,761
Salaries	(7,706)	8,066	(5,859)	6,171	(1,847)	1,895	(26,286,577)	30,459,864
Wages	(42,240)	43,858	(41,413)	43,125	(827)	733	(103,191,418)	121,202,897
Quebec	(23,675)	23,894	(22,459)	22,693	(1,216)	1,201	(60,623,167)	69,147,780
Salaries	(3,381)	3,595	(2,566)	2,767	(815)	828	(12,160,612)	13,625,031
Wages	(20,294)	20,299	(19,893)	19,926	(401)	373	(48,462,555)	55,522,749
Ontario	(16,927)	17,674	(15,947)	16,718	(980)	956	(44,235,111)	51,776,145
Salaries	(2,782)	2,863	(2,130)	2,174	(652)	689	(9,081,926)	10,807,245
Wages	(14,145)	14,811	(13,817)	14,544	(328)	267	(35,153,185)	40,968,900
British Columbia	(4,426)	5,036	(4,180)	4,820	(246)	216	(12,414,932)	15,747,555
Salaries	(834)	777	(656)	607	(178)	170	(2,712,469)	3,055,869
Wages	(3,592)	4,259	(3,524)	4,213	(68)	46	(9,702,463)	12,691,686
Other Provinces (Nova Scotia, New Brunswick and Manitoba)	(4,918)	5,320	(4,686)	5,065	(232)	255	(12,204,785)	14,991,281
Salaries	(709)	831	(507)	623	(202)	208	(2,331,570)	2,971,719
Wages	(4,209)	4,489	(4,179)	4,442	(30)	47	(9,873,215)	12,019,562

& Pulp Ass'n., to its membership.

"Proposals are pending before Congress to create Valley Authorities for the Missouri River, the Columbia River and other specific river valleys. There are also other proposals for dividing the entire United States into Authority areas.

"An analysis of these proposals makes it unmistakably clear that the intent is to create a new kind of government in our nation. In essence, a centralization of wide economic and political powers is established in the Federal government to be exercised by regional boards appointed by and responsible only to the President. More is involved than a transfer of present State regulations, definitions and controls; new economic controls are created over the freedoms of choice and individual actions which the people heretofore have jealously maintained and which are the very mainspring of our American enterprise system.

"Such Valley Authority proposals entrust the physical development of a river and its valley to a board quite removed from the guidance and jurisdiction of the people of the area. There can be no justification for granting to the Federal government the unique and final power to determine the needs and extent of river developments with their conflicting objectives.

"Much more serious, however, is the fact that these Authorities are given power to dominate and control the economic life, growth and competitive position of the area at the expense of taxpayers outside the area. Industry cannot agree that such a centralization of power is either needful or desirable.

"Therefore, industry is opposed to the creation of any additional Valley Authorities."

Canadian Power Consumption, 1948

OTTAWA — Power ordinarily in use in the pulp and paper industry in 1948 totaled 2,513,115 h.p., from 30,260 units of the following classes: the Canadian Government reports 154 steam engines (33,227 h.p.), 146 steam turbines (217,637 h.p.), 5 diesel engines (470 h.p.), 22 other internal combustion engines (945 h.p.), 255 hydraulic turbines (634,931 h.p.), and 29,678 electric motors operated by purchased power (1,625,905 h.p.).

There were also 14,166 electric motors (562,627 h.p.) operated by power generated by the primary units. Equipment in reserve or idle comprised 34 steam engines (9,209 h.p.), 36 steam turbines (51,899 h.p.), nine diesel engines (2,520 h.p.), 19 other internal combustion engines (819 h.p.), 13 hydraulic turbines (9,000 h.p.), 2,832 electric motors on purchased power (94,230 h.p.), and 1,295 electric motors on generated power (44,311 h.p.).

The cost of purchased fuel used in 1948 in this industry was $41,365,665, representing an increase of 29.9 percent over the corresponding figure for the preceding year.

Canadian-mined coal represented 96 percent of the fuel cost in the Maritime Provinces.

In Quebec, Canadian-mined coal was only 26.2 percent of the total and imported coal made up 69.4 percent of the cost.

The principal fuel in Ontario was imported coal which amounted to 90 percent of the fuel bill in that province. In Manitoba, Canadian-mined coal represented 58.3 percent of the fuel cost.

In marked contrast to the other provinces, 84.7 percent of the fuel cost in British Columbia went to fuel oil.

Some mills also reported the use of 50,821 cords of slabs and edgings, 129,432 units (of 200 cu.ft., each) of sawdust and 123,016 tons of other wood-waste from their own plants.

It is shown in the report that the pulp and paper industry is the largest user of hydro-electric power in Canada and in 1948 used 10,350 million kilowatt-hours of electric energy, of which 8,022 million kilowatt-hours were purchased and the remaining 2,327 million generated in the plants of the industry itself. Approximately 5.9 percent of the purchased electricity was used for electric boilers. The cost of purchased electricity in 1948 amounted to $22,477,446, a decrease of 4.8 percent from the preceding year. Of the total amount, $1,320,407 was spent for use in electric boilers as compared with $4,118,420 in the previous year.

WORLD AFFAIRS . . .

Wood Pulp*

Conclusions of the Montreal Conference In Two Parts—Part II

(Continued from November 3 issue)

Europe: Last year's pulp production in Europe was not quite two-thirds of prewar, but by 1955 European nations expect to regain 90 percent of their prewar output. This would require approximately 48 million cubic meters of pulpwood supplies by roughly 3.6 million cubic meters. This situation exists in spite of the fact that for the continent of Europe taken as a whole forests are at present being overcut to the extent of 20 percent of annual growth. In some cases, however, and in particular in northern Europe, annual drain is line with annual growth.

In prewar years, Europe's pulp industry relied on an annual import of 3 million cubic meters of pulpwod which came almost entirely from the present area of the Soviet Union. The Conference feels that a resumption of pulpwood exports from the U.S.S.R. on the prewar scale is unlikely.

In that case, Germany, France, and, to a smaller degree, the United Kingdom and Switzerland might be compelled to reduce their production below the 1955 estimates.

It should be stressed that if lack of pulpwood compels European nations to reduce pulp production approximately one million tons these countries might need to import more pulp or paper from the Western hemisphere. If such additional imports were to offset the reduction in pulp output, the result at present prices would be a deterioration of Europe's dollar position by an amount well in excess of 100 million dollars. If, on the other hand, European countries could find the necessary pulpwood or other raw material to maintain production, such imports, if obtained from eastern Europe, would cause no dollar drain; if the pulpwood were supplied from North America, it would create a dollar liability at the maximum in the order of 20 to 30 million dollars.

It is possible that an increase in the raw material supplies for European mills can be achieved to some extent by closer utilization of sawmill waste, greater use of hardwoods and alternative raw materials, the introduction of high yield pulping methods, and possible diversion of some fuelwood or other timber to the pulp mills. The active programs of research under way in Finland, Sweden, and other countries may lead to more efficient use of raw materials. Further wood pulp capacity, either newly built or transferred from other areas, might be supported in certain central and eastern European countries which at present do not make full use of smaller wood from their forests or the wood refuse fom their sawmills.

U.S.S.R.: No detailed information is available with regard to the pulp capacity or production of the Soviet Union. Before the war that capacity amounted to approximately one million tons annually and it is understood that great efforts are being made to expand the pulp and paper industry as rapidly as possible. It is known that the undeveloped forests of the Soviet Union are of enormous extent, consequently the prospects for future output are very high. On the other hand, Soviet reports indicate that the forests of western Russia were seriously overcut for many years prior to 1936 and war damage in that region was undoubtedly great. In consequence, it is not impossible that all the pulpwood that can be produced west of the Urals will be needed for domestic production.

North America: The consumption of pulpwood in North America increased by 75 percent from 1937 to 1949 and a further increase of 20 percent is anticipated by 1955. Canada exports large quantities of pulpwood to the United States and small amounts across the Atlantic, but no pulpwood is imported from other regions. It is believed that forest resources now accessible are capable of maintaining supplies of wood adequate for current production levels. From the medium and long-term points of view,

* Courtesy *Unasylva*, published by the Food and Agriculture Organization of the United Nations.

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- ... ***that*** reduces operation and maintenance costs through balanced impeller design and replaceable liners.
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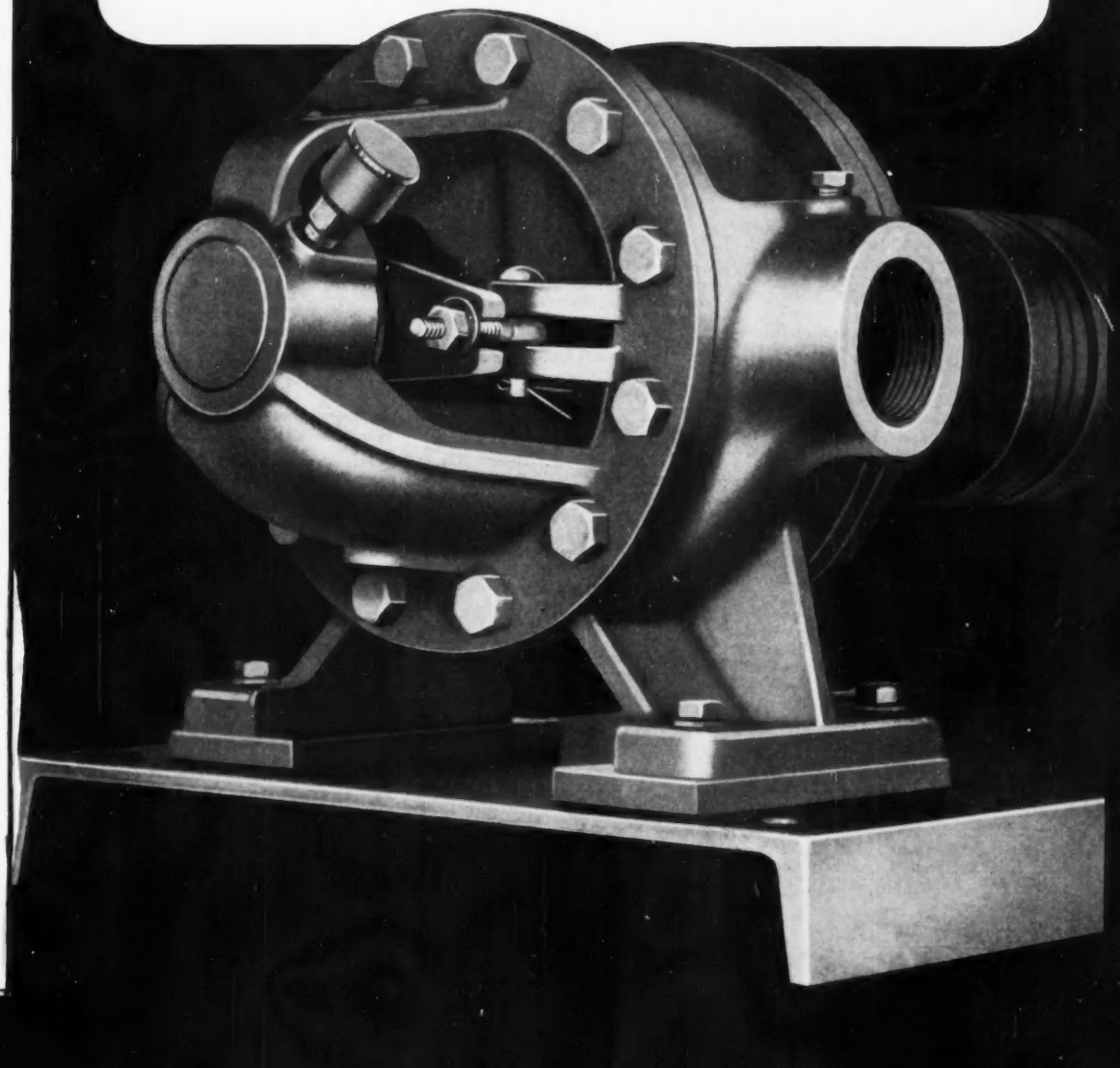


great opportunities exist for still further expansion as more and more of the forest area is subjected to improved forest management and to more adequate protection against fire, insects, and diseases, and the industry makes greater use of hardwoods and wood now wasted and introduces high yield pulping methods. In addition, there remain large forest areas not yet fully utilized, notably in the northern parts of Canada, Alaska, and portions of the Rocky Mountain area. Plans for bringing the forests of Alaska into production are already far advanced.

Near East and North Africa: There is no wood pulp production in this region because of almost complete lack of forest resources. The only country where small-scale development might be possible is Turkey. All paper requirements of the region must be imported.

Africa (except North Africa): A small quantity of chemical pulp is produced in the Union of South Africa, wood supplies being obtained from plantations of "exotic" species. While it is understood that some expansion of capacity is contemplated in the Union, all of it will be needed for home consumption. In the remainder of the continent there are estimated to be about 300 million hectares of forests of productive quality, but virtually the whole area is occupied by broadleaved species. Much of it is tropical rain forest. The problems of adapting such species to the commercial production of pulp have not yet been fully solved, nor had a systematic program of research been undertaken until recently. The Conference noted with great interest a report by the French Delegation regarding the successful conclusion of experiments for the pulping of a considerable number of species. Mixtures of as many as 24 tropical species have been successfully digested in a commercial plant in France and sample lots of good paper have been made from the resulting pulp. A pilot mill is under construction on the Ivory Coast to determine the practical possibilities on a commercial scale.

Latin America: The population of this region, estimated to be 150 million people, is about equal to that of North America, yet pulp production is very small. The larger part of it is carried on in Brazil and Mexico, and is based upon raw materials from local coniferous forests. Latin America, however, contains about 715 million hectares of productive forest land, although only 3½ percent of this vast area carries conifers. Here, as in Africa, the possibilities for augmenting world pulp supplies are enormous providing that the social, technical, and economic problems connected with the utilization of tropical forests can be solved.

Asia and Far East: Pulp production in Asia fell from 1.5 million tons in 1937 to 0.5 million tons in 1948, largely because of the changed situation in Japan. Reports indicate that Japanese forests have for some years been heavily overcut and until the benefits of reforestation have been realized the prospects for obtaining more pulpwood are negligible. Plans to increase Japanese pulp output to 880,00 tons by 1955 depend on the possibilities of securing large imports of pulpwood not yet in sight, or on developing alternative raw materials such as rice straw.

In India, at least one new pulp mill is planned for erection in the near future, but in most parts of the country the local forest resources appear insufficient to support a large wood pulp industry in addition to other demands of the increasing population. The Conference was advised that there are large forest resources of species highly suitable for pulp manufacture in the North, and that the real difficulty at the moment is the lack of accessibility to such regions.

The situation in China precludes any estimate of future possibilities. It is believed that here again there are substantial forests located in areas very remote and difficult of access, but in the thickly populated areas the supplies of wood which might be converted into pulp are small. It is possible that substantial pulp production may eventually be developed on the basis of bamboo.

In other countries of Asia, including Burma, Thailand, Indochina, Malaya, and the Phillipines, there are extensive forests, but most of these are broad-leaved types. Indonesia also has vast tropical forests and, in addition, a considerable area of pine. Plans for a sulphate mill to be supplied by this pine were interrupted by the war but are once more under active study.

Oceania (Australia and New Zealand): The Conference was informed that the present small production in New Zealand of 24,000 tons annually is to be increased to 135,000 tons by 1955 and may eventually reach 250,000 tons. This development is made possible by the extensive "exotic" forests of insignis pine and other conifers, whose rate of yield under New Zealand conditions is phenomenally high.

Australia produced 136,000 tons of pulp in 1948 and expects to increase her output to 210,000 tons by 1955. This will be done entirely on the basis of domestic forests. In view of their active forestry programs, it seems possible that the principal countries of this region may eventually be able to supply all or most of their own requirements for pulp.

World Trade in Wood Pulp: In 1948 world trade in pulp was still only around 70 percent of prewar. The reduction was attributable entirely to Europe with exports below 60 percent of 1937 and imports on a slightly higher level.

Despite this decline, Europe remains the center of world pulp export trade. In 1937 pulp exports came from only two regions and of these Europe accounted for 80 percent, with North America contributing the rest. It should be stressed that both in Europe and in North America most of the pulp trade takes place within each continent. Before the war, only a very slight percentage of North America's pulp exports were exported from this continent, and less than one-third of European exports went overseas. Yet with these exports Europe, and in particular the Scandinavian countries, practically covered the pulp import needs of the rest of the world.

In 1948 Europe's pulp exports had fallen from 80 percent to 60 percent of the world total but were still roughly twice as high as North America's. Since most of North America's pulp exports continued to move between Canada and the United States, Europe retained its position as the major source of market for all continents except North America.

Conference estimates indicate a gradual expansion of world pulp trade. In 1949 and 1950 it is anticipated that total exports will remain around 80 percent of prewar, but they are expected to exceed the 1937 figures by some 10 percent around 1955. Europe would account for not quite 60 percent of that total, and the remaining 40 percent would be contributed by North American exports. If this assumption proves right, it will mean that North American pulp exports will no longer be mainly confined to intracontinental movements.

At present, monetary restrictions, currency fluctuations, and artificial exchange rates are distorting the distribution of market pulps throughout the world. Until some over-all solution of these distorting factors is achieved, both producers and consumers of wood pulp everywhere face constantly changing conditions which interfere with normal trade.

SUPPLIERS

Hercules Powder Co., has created two new top posts at its Experimental Station in Wilmington, Del. Dr. Peter VanWyck, formerly technical assistant in the research department, becomes assistant director of the experiment station, responsible for the work done by the cellulose products, explosives, and Virginia Cellulose research divisions. Dr. Richard S. George, formerly manager of the naval stores research division, will be assistant director of the experiment station, responsible for the work done by the naval stores, paper makers chemical, and synthetics research divisions. Dr. Reginald W. Ivett succeeds Dr. George as manager of the naval stores research division. The company has also transferred two men from the home office to the experiment station research staff. They are: Edmund Winterbottom, who is appointed administrative assistant to Dr. Schultz; and Dr. John T. Hays, appointed special assistant in the scout-

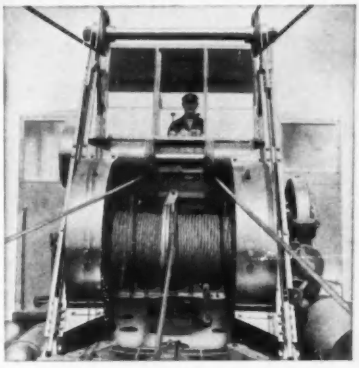
electric travel reduces maintenance costs of new

BROWNHOIST DIESEL ELECTRIC LOCOMOTIVE-CRANE

(PATENT APPLIED FOR)

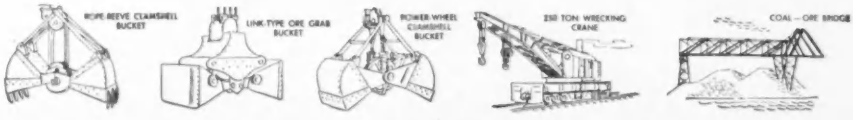
In designing the new Brownhoist Diesel Electric Locomotive-Crane for double duty as a power unit and switching engine, Brownhoist engineers had two prime objectives: increase operating efficiency and reduce maintenance costs. The new Brownhoist Diesel Electric supplies *traction power directly to the axles from two oversize spring-mounted motors hung inside the AAR cast steel side frame trucks. Power for hoist, swing, and booming is transmitted through a helical gear reducer.* Simple, efficient, practically trouble-free!

These are only two of the many *money-saving, labor-saving, time-saving* features engineered into the Brownhoist Diesel Electric Locomotive-Crane. Others include the patented Monitor-type cab that affords the operator 360° visibility—travel speeds up to 15 M.P.H.—double disc roller bearing mounted rotating clutches—roller bearing boom tip sheaves—14″ safety clearance between car body and rotating bed—safe worm driven boom hoist. Capacities 30 tons and up. Write for complete facts that will show you how to *speed and simplify your material handling at lower costs.*



This view shows how travel clutch shafts and operating gear have been eliminated from the Brownhoist Diesel Electric Locomotive-Crane. Note 360° vision Monitor-type cab with hoist and boom drums in full view of operator.

BROWNHOIST BUILDS BETTER CRANES



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ing research division. Dr. Hays also will continue his university contacts with prospective technical employes. Fred K. Shankweiler, who has been manager of Cellulose Products' New York office for the past two years, has been transferred to Wilmington where he will be supervisor of chlorinated products, and James R. Yeager has been named to succeed Mr. Shankweiler in New York. For the past five years Mr. Yeager has been lacquer marketing supervisor in the home office at Wilmington.

American Cyanamid Co., Calco Chemical division, Bound Brook, N. J., has named the following men as members of the current group selected for its technical training program: William R. Biles, B.S., Ch.E., University of Cincinnati; Mitchell S. Dimitri, M.S., Ch.E., Georgia Tech; Robert B. Fortenbaugh, Ph.D. Chem., Johns-Hopkins; Hermes O. Grant, B.S., Ch.E., University of Virginia; Robert A. Hardy, Ph.D. Chem., Yale University; Harold Marsh Ph.D. Ch.E., Purdue University; Thomas Rees, Ph.D. Chem., Yale University; Gerard N. Vriens, Ph.D. Ch.E., Purdue University; Clyde N. Whitesides, B.S. Tex. Chem. & Dye., North Carolina State; Robert E. Whitfield, Ph.D. Chem., Harvard University; and Philip A. Woerner, B.S. Tex. Chem. & Dye., North Carolina State. The training program was started in 1932.

Recent additions to its technical staff include: Stephen E. Ulrich, Ph.D. Chem., Rutgers University; Arden W. Bush, B.S. Chem., University of Virginia; John J. Campbell, Jr., B.S. Ch.E., Rensselaer Polytechnic Institute; Ernest A. Hewett, B.S. Chem., New York University; Marsden C. Hutchins, M.S. Ch.E., University of Maine; and Robert R. Kaedle, B.S. Chem., Marietta College; Miss Nancy B. Drier, B.A. Chemistry, Gettysburg College; Mrs. Janice D. Miner, A.B. Chem., Connecticut College.

International Nickel Co., New York, has been granted two patents on "ductile cast iron," a new cast iron which can be bent or twisted and which has several times greater strength than ordinary cast iron. Disclosure of the new development was made on October 28 by Don Reese, foundry expert and engineer, before the annual meeting of the Gray Iron Founders' Society, at the Edgewater Beach hotel, Chicago, who said that the U. S., Patent Office has recognized the meritorious nature of these inventions by granting Patent Nos. 2,485,760 and 2,485,761 to International.

"The inventions," Mr. Reese stated, "were developed after many years of experiment and testing in the Bayonne (N.J.) research laboratories of International Nickel's development and research division.

"This new ductile cast iron combines processing advantages of cast iron, such as fluidity, castability and machinability, with many of the product advantages of steel. The essential feature of the inventions is the introduction into and retention by the molten iron under treatment of a small but effective amount of magnesium. The presence of critical amounts of magnesium in the novel cast iron produces a new graphite structure which is in the form of spheroids or compacted particles. Due to the elimination of a substantial amount of the usual weakening flake graphite, the new magnesium-treated cast iron possesses excellent engineering properties, particularly high tensile strength, elastic modulus, yield strength, toughness and ductility. Under stress, it behaves elastically like steel rather than like cast iron, having proportionality of strain to stress up to high loads with a modulus of elasticity of about 25 million pounds per square inch.

"More than 40 companies in many industries are now licensed under the patents to produce this new cast iron development. As much as 700,000 pounds of the material have been made in one day by the licensees, and as much as 200,000 pounds have been cast in one day by a single licensed foundry. Large castings requiring the pouring of 50,000 pounds of magnesium-treated molten metal for each casting have been produced utilizing the technique of this new development. Thousands of different component parts and as many as 12,000 of a similar part have been made of the patented ductile cast iron."

Mr. Reese added that the inventions are being protected patentwise in all important countries of the world, as it is expected that the inventions will be adopted on a world-wide scale.

General Electric Co., has named Richard Cutts, Jr., manager of sales for the central station divisions of the apparatus department, with headquarters in Schenectady. Succeeding him as assistant manager of sales for the G-E meter and instrument divisions at Lynn, Mass., is Donald E. Craig, who has been manager of sales for the unit substation section of the central station divisions. Simultaneously, four managers of sales for different sections of the central station divisions were named as follows: E. N. Chilberg, eastern section; R. R. Owen, western section; J. W. Dodge, government section; and L. B. Proctor, Rural Electrification Administration section. These four will be headquartered in Schenectady.

Joseph Morningstar, president of Morningstar, Nicol, Inc., New York, and Anthony J. Gabriel, general manager of the New England Starch Co., potato starch manufacturers, in a joint statement on November 1 announced that the former company has been appointed sales agent for the Houlton and Mars Hill, Maine, factories. This combines the sales of the New England Starch Co., plants with the Aroostook Potato Products Co., a subsidiary of Morningstar, Nicol, Inc.

Hungerford & Terry, Inc., Clayton, N. J., manufacturer of water treating plants, has named four new representatives: Walton & Best, 320 Plymouth building, Cleveland — Northern Ohio and Northwestern Pennsylvania; Allan K. Cook Co., 505 South Third street, Louisville, Ky. — Kentucky; C. J. Gaskell Co., 1007 Falls building, Memphis — Western Tennessee, Eastern Arkansas; Harold O. Knape, 308½ North Harwood street, Dallas—Northeastern Texas.

Appleton Machine Co., Appleton, Wis., on October 26 elected Victor W. Bloomer president, succeeding Henry P. Madden, who died on October 12. Mr. Bloomer has been associated with the firm since 1920. Richard Radsch was elected vice-president in charge of sales and Cecil Furminger, treasurer. Mr. Radsch previously was sales manager and Mr. Furminger, vice-president. Miss Carrie B. Morgan continues as secretary.

DeLaval Steam Turbine Co., Trenton, N. J., has appointed the Superheater Co., Ltd., Montreal (in conjunction with affiliate, Combustion Engineering Corp., Ltd.), as its representative in Canada. Superheater Co., Ltd., will sell and service DeLaval turbines, pumps, gears and compressors in Newfoundland, New Brunswick, Nova Scotia, Prince Edward and Quebec provinces.

Worthington Pump & Machinery Corp., Harrison, N. J., will exhibit chemical pumping equipment ranging from high head, low capacity pumps to low head, high capacity pumps, constructed of stainless steel, bronze, cast iron and plastics, at Grand Central Palace, New York, November 28–December 3. The exhibit will also feature mechanical seals, stainless steel valves, etc.

M. J. Conway, Michigan Alkali Division Pittsburgh office manager, Wyandotte Chemicals Corp., was recently presented with a gold watch in recognition of his 25 years of service to the company. Presenting Mr. Conway with his watch was Bert Cremers, vice-president of the Michigan Alkali Division.

Dr. Edward Payson Bartlett, senior research associate of the polychemicals department of E. I. du Pont de Nemours & Co., Inc., Wilmington, Del., retired on November 1 after 20 years in the company's research laboratories.

E. P. Lawson Co., has named Arthur Held to the sales staff of its newly established midwestern branch at 628 South Dearborn street, Chicago.

Russell G. Davis has been named a sales executive of Chain Belt Co., Milwaukee.

Many Economies

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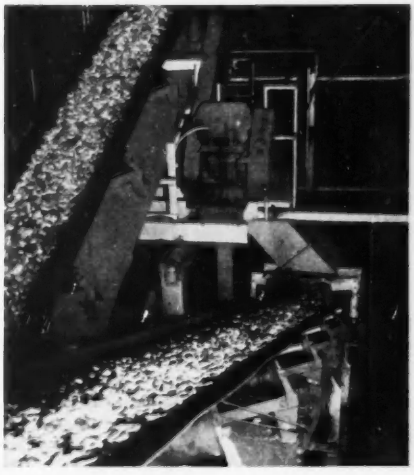
Above—This plant is equipped with S-A belt conveyors for handling wood chips to four storage silos and reclaiming from silos for delivery to digesters.

Moving logs and chips through production at the required speed and in the required volume . . . *at lowest possible cost* is the first step to economical operation.

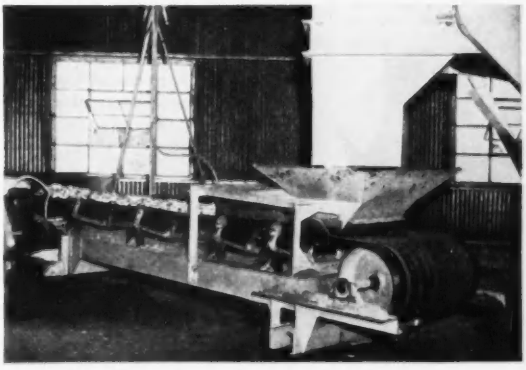
For nearly 50 years, Stephens-Adamson engineers have been helping operators in every kind of industry increase bulk handling efficiency and reduce handling costs. *In the paper industry*, S-A conveyor systems are handling logs and wood chips . . . salt cake . . . chemicals . . . and coal for the power house.

S-A engineers will be glad to review *your* operations with the object . . . lower handling costs. Write us today . . . there is no obligation.



Middle Right—Belt conveyor transfer point in chipper building. All conveyors are equipped with compact SACO speed reducer drives.

Bottom Right—Short belt conveyor in housing over top of silos is pivoted under feed point . . . outer end of conveyor travels on circular track to permit belt to discharge into any of four silos below.



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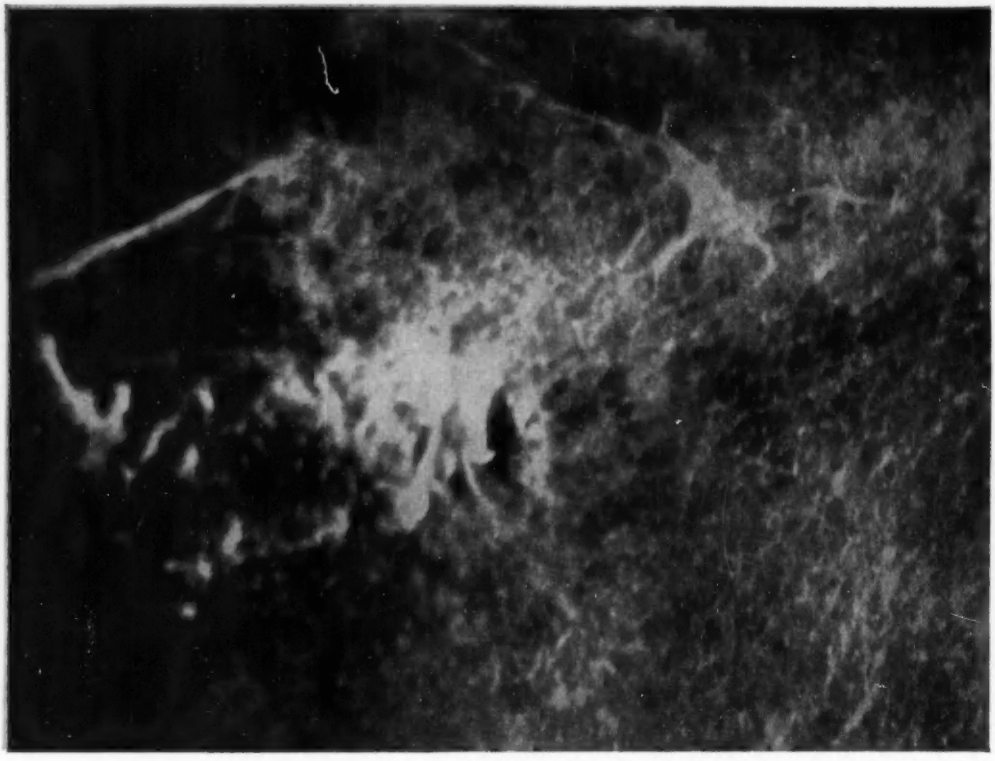

An example of Lenzites trabea—a common mold magnified seventy-four times.

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Mold eats its way into your profits when it grows in lap stock. Once it gets started, the mold's black and bluish colors are oftentimes carried through the manufacturing processes into the finished product. But that's not all. The feeding fungi rob the lap stock of its best paper forming abilities and its strength.

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Sales Engineer, Downingtown Manufacturing Co., Downingtown, Pa.

The types of suction rolls in use on tissue machines are as follows: Press Rolls; Couch Rolls; Pressure Rolls; and Felt Cleaning Rolls.

Each application shall be presented separately.

Many of you are familiar with the mechanical construction of the Downingtown Suction Roll, but for the benefit of those who may not be, we have a sectional view of the roll and I should like at this time to point out a few of the salient features.

You will note the Downingtown Suction Roll has four roller bearings and a ball thrust bearing.

With this type construction the shell and suction box are carried independent of each other, each on its own roller bearings, located symetrically with respect to the shell. This permits accurate grinding of the shell to a true curve.

Also with this type construction a very distinctive feature is possible, i.e., ports in the front and rear heads. These ports are as wide as the suction box opening and have two important functions.

First, the removal and replacement of the end deckles and longitudinal packing strips can be easily and quickly effected through the ports without dismantling the roll. The advantages of this feature time-wise and cost-wise are obvious.

Secondly, the location of the suction area is visible to the operator, at all times, through these ports.

The Downingtown Suction Roll may be furnished for either front or rear suction connection, as desired.

The majority of suction press rolls are covered with a 1" thick rubber cover — 30 to 35 plastometer on a P & J ⅛" ball, but there are a number of installations on kraft and one on tissue which do not have a rubber cover.

The use of a rubber cover is for the purpose of obtaining greater water removal, improvement of felt life and elimination of shadow marking. The improved water removal is attributed to the wider nip which permits the pressure to be carried on the sheet for an appreciably longer length of time than with a solid metal roll, where we have substantially only a line contact.

The Downingtown Suction Roll is a direct driven roll for either front or rear suction, being directly connected to the indrive shaft through a flexible type coupling.

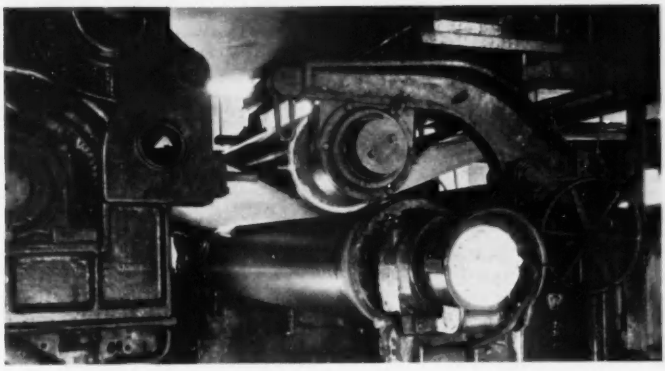

Figure 1.

The suction box is adjustable to any desired position around the 360°. Adjustment is effected through a worm and gear mechanism located on the operating side of the machine. This also locks the suction box in position.

Adjustment of the deckles, as well as the take up on the longitudinal strips to compensate for wear, is also effected from the front or operating side of the machine. All these adjustments can, of course, be effected on the run.

The centrifugally cast bronze shell is spirally drilled to eliminate grooving of the shell and seal strips.

The shell thickness of the standard roll is ample to withstand normal operating pressures. Where unusual nip pressures may be required, either the roll diameter or the shell thickness is increased.

We have several installations of Downingtown Suction Presses on Harper and straight through type Fourdrinier tissue machines, quite a few of which are in the area covered by this division.

We are deeply indebted to the Sweet Bros. Paper Mfg. Co., of Phoenix, N. Y., and the Personal Products Co., of Milltown, N. J., for the pictures of the installations and the operating data which they have provided for use in this paper. We also wish to express our appreciation to the many other companies who have provided us with information which has been incorporated in this paper.

Figure 1 shows a typical installation of a Downingtown rubber covered suction press on a machine having a Harper type Fourdrinier.

This machine is in the mill of the Sweet Bros. Paper Mfg. Co., Phoenix, N. Y., R. W. Sweet, president; H. D. "Doc" Cook, superintendent. The machine has a wire 92" wide x 50'–0" long and produces tissues in a range from 10 lb to 25 lb.

Note the adjusting mechanisms previously referred to, all conveniently located on the front or operating side. Note also the port in the head, referred to previously.

The function of the suction press roll on all grades of paper is to effect the vertical removal through suction of the pressed out water, as well as the conditioning of the felts.

On plain presses the water is removed horizontally, being forced back through the web of paper and the felt, against the direction of the run, thereby disrupting the formation and tending to fill up the felt.

Figure 2 is a view looking into the press on the incoming side. Note the absence of any collected water at this point, indicating its removal vertically.

Previous to the installation of the 22" diameter Downingtown rubber covered suction press on this machine, the top speed on 12–13 lb napkin stock was 450 FPM, due to crushing and pin holes at the press at speeds in excess of 450 FPM.

After installation of the suction press the machine speed was increased to 700 FPM. No other changes or additions to the machine were made.

This increase in speed was made possible by the elimination of crushing and pin holes at the press effected by vertical water removal and conditioning of the felt by the suction press.

In addition to the increase in machine speed of approximately 55%,

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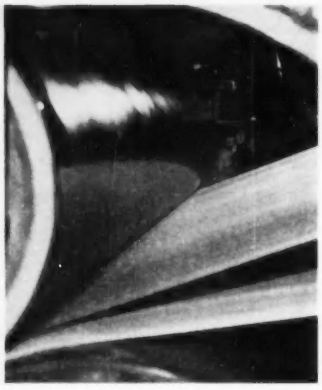


Figure 2.

the felt life was increased 90% over the felt life experienced at 450 FPM.

It is interesting to note that the mill informs us the present speed of 700 FPM is not limited at the press but by their forming and drying capacities.

Figure 3 shows a Downingtown rubber covered suction press 26" diameter on a conventional straight through Fourdrinier machine in the mill of the Personal Products Co., Milltown, N.J., R. A. Monteith, vice-president in charge of the Paper Division; L. P. "Larry" Thompson, production manager.

There are two machines in this mill both identical in make-up — wires are 144" wide. Drying is done on Yankee dryers, one on each machine.

Although these machines never operated without suction presses, speeds in excess of 900 FPM would not be possible with plain presses.

The present top speed is 1200 FPM. Again it is interesting to note that the speed is not limited at the press but by the drive.

These machines are unique in the following features: Felt — 42" long; no felt conditioners; no wringer rolls; only two suction boxes on felts.

The felts are kept clean and conditioned by the Downingtown suction press rolls.

Figure 4.

The sheet goes to the Yankee dryer 31% B.D.

Figure 4 is a view looking into the press on the incoming side. Again note the absence of any water in back of the nip.

On another suction press installation recently made on a machine making facial, the following benefits were obtained.

Speed increased from 700 FPM to 1200 FPM. Again press is not the limiting factor.

Previous to the installation, felts had to be washed three times in each 24 hours. Felt life average was seven days. Since installation, no washing of felts during runs is required and felts now average sixteen days, an increase of well over 100%, at an increase of 70% in speed.

The above results are typical of all installations as shown by reports we have received from the mills.

From the above mill information the following advantages are obvious:

Increased production. The percentage of increase in tonnage is greater than the speed increase due to less down time through safer running and elimination of felt washing during runs.

Greatly reduced felt cost per ton, due to increased felt life and increased tonnage.

Suction couch rolls cannot be used on tissue due to the necessity of a pick-up felt to take web of paper from the wire. Suction on the couch would not permit its transfer to the pick-up felt.

Suction couch rolls are used on cigarette and condenser tissue as these papers are strong enough to carry from the couch to the press felt and do not require a pick-up felt.

We have several installations of suction couch and suction press on cigarette and condenser tissues.

The mechanical construction of the Downingtown suction couch is identical to the suction press except the shell is not rubber covered and the suction couch is provided with cantilever equipment to facilitate wire removal and replacement.

The use of the suction pressure roll on Yankee machines, in place of the conventional plain pressure roll, is becoming quite common.

The results obtained on the several installations we have made are quite beneficial.

The mechanical construction is identical to the suction press roll, plus a swivel type suction connection to permit movement of the roll.

The use of the suction pressure roll permits higher pressures by the elimination of air between felt and sheet. This assures closer contact of the sheet to the Yankee dryer surface.

No drive is required for the pressure roll as it is driven in the same manner as the plain pressure roll, i.e., through contact with the dryer.

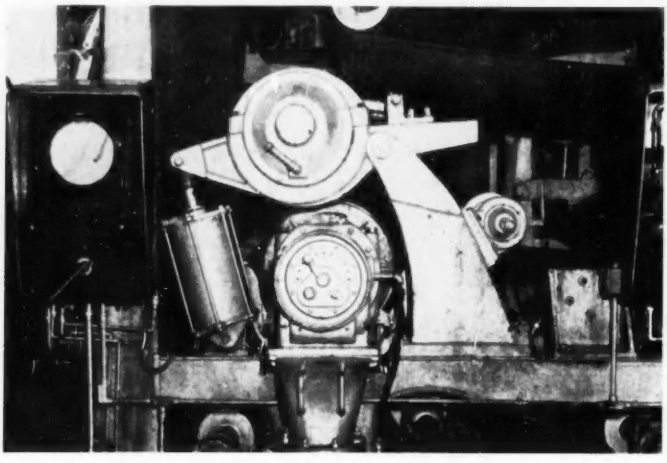


Figure 3.

In each installation the suction pressure roll is preceded by a suction press roll.

The Downingtown suction felt cleaning roll is used on the wet felt on both cylinder and Fourdrinier tissue machines.

Due to the close weave of the plate or pick-up felt on Fourdrinier tissue machines we do not recommend its use on this felt.

The suction felt cleaning roll installed on the wet felt of tissue machines and followed by wringer rolls does a splendid job of keeping the felt clean and prolonging felt life.

The felt must be well showered on the dirty or sheet side, just ahead of the suction cleaning roll.

The suction felt cleaning roll removes the loose dirt and foreign matter and some of the water.

The wringer rolls are required to remove the excess water from the woof and warp threads.

It is obvious that at the present high speeds on tissue machines, suction alone could not remove enough water from the threads due to the short length of time they are subjected to the suction.

As the foreign matter has been removed by the suction felt cleaning roll, the action of the wringer rolls is less injurious to the felt, as they do not imbed the foreign matter into the felt.

Since the suction felt roll rotates, there is no drag over its surface such as is the case with flat suction boxes, thus increasing felt life.

Some Aspects of Cottrell Precipitator Operation In the Kraft Industry

By

C. E. HAND

Electrical Supt., Bloedel, Stewart & Welch, Ltd.

Application

The application of the Cottrell Electrostatic Precipitator to the Pulp and Paper Industry in Canada is a fairly recent innovation. It has introduced new problems in operation and maintenance to an already highly specialized industry. As experience has been gained, improvements have been conceived, and the knowledge acquired has been incorporated into the latest installations. Progress has been based also on fundamentals established in other industries where precipitators have been in use for many years. Most of you are familiar with the generai lay-out and operation of a modern precipitator, therefore, the Port Alberni installation will not be described in detail, except for certain features which we think are outstanding improvements or weaknesses. This paper is intended as a summary of the experience and conclusions so far arrived at in the operation and maintenance of one of the most recent Cottrell Precipitator installations in the West.

General Description

The Bloedel, Stewart & Welch precipitator installation at Port Alberni was supplied by the Precipitator Company of Canada. It was designed to handle 78,000 C.F.M. of gas at 270°F. to 310°F. at an efficiency of 86 percent minimum. The arrangement consists of one gas unit of four sections in series, with only three of the sections equipped with electrodes. Provision was made for the inlet section to be equipped at a later date. Each section has 19 rows of rod curtain electrodes, 8 feet wide by 18 feet high on 8 inch center to center spacing. The treaters are under suction from a 225 foot concrete brick-lined stack. The flue gas from a Combustion Engineering recovery boiler passes over black liquor disc evaporators, through an induced draft fan and then into the precipitator treaters. Dampers of the louvre type are installed before and after the precipitator. A short stack is provided ahead of the inlet damper for the purpose of diverting the gases, if it becomes necessary to enter the treaters for repairs during boiler operation.

The precipitator equipment is situated in a building adjoining the recovery building. The walls of the treaters are of reinforced concrete, with no internal steel lining. The hoppers, and insulator compartments have been coated with Heresite, for protection against corrosion. The outside surfaces of the hoppers and inlet and outlet ducts are insulated. The operating floor is above the treaters, and all the electrical equipment and controls are in a separate control room.

Each section has its own electrical rectifier equipment. It is possible to shut down one rectifier and supply all three sections from two rectifiers. All practical safeguards to personnel in the form of electrical interlocks and padlocks are incorporated.

Insulation Breakage

The operation of the Port Alberni kraft mill was very erratic for some time after the initial start-up. Steady operation for an entire month did not occur until near the end of the first year, due to an inadequate power supply and shortage of chips. These conditions are not favorable to good operation of a precipitator. The frequent start-ups, with damp and cold conditions in the treaters, produced electrical and thermal stresses which resulted in an epidemic of cracked high voltage suspension insulators.

The supply of insulator replacements was quickly exhausted. Temporary repairs were effected by spirally winding cambric tape over the central support rod inside the broken insulator shell. The make-shift repairs lasted successfully over a period of several months, until replaced by new insulators. At this time we experimented with special celeron tubes slipped over the center rods. They were punctured immediately, probably due to the lack of voltage gradient which would exist in the case of layers of cambric tape. Electric heaters were installed in the insulator compartments to prevent condensation. Small ventilating holes were provided in the sides of the compartments so that a current of air would be drawn in by the draft suction, thereby lessening the amount of chemical which would collect on the insulators. As the plant got into steadier operation, insulator failures ceased and the maintenance requirements became more nearly normal.

Electrode Rods

Trouble was soon experienced with breakage of discharge electrode rods, or from their jumping out of their sockets and swinging in the gas stream. Once detected, a faulty rod was pulled out from above, but frequently several would be removed before the right one was located. One of the disadvantages with a series arrangement of treaters is that the flue gas cannot be easily diverted while working on the curtains. Visibility is therefore much restricted. It is nearly impossible to see more than a few feet down the curtains. The reasons for this inaccessibility will be discussed later.

Corrosion

It has become apparent that the frequency of electrode failure is greatest just after a shut-down. This points to corrosion as being the principal cause of deterioration and failure of the rods. The discharge rods being the thinnest are the most rapidly weakened. As the boiler cools during a shut-down, water vapor, chiefly from cooling and diluting the cascade evaporators, continues to be drawn through the precipitator where it condenses and forms a very corrosive mixture, apparently due to sodium chloride and SO_3 left in the curtains and throughout the treaters. The obvious preventative is to close the inlet damper and divert the vapors up the short stack. However, the dampers themselves soon become inoperative, due to this same corrosion. This fault similarly prevents entering or looking into the treaters during normal operation as mentioned previously. We are therefore abandoning the louvre principal of the inlet damper and are installing a sliding gate type, which we hope will solve the trouble.

Air leaks are another source of cor-

Presented at the 1949 Joint Spring Convention of the Pacific Coast Branch Technical Section, Canadian Pulp and Paper Association and Pacific Coast Division, The American Pulp and Paper Mill Superintendents Association, Inc.

rosion in the gas ducts and shell of the precipitator. Air infiltration likewise produces arcing, and by dilution and cooling of the gas stream lowers the efficiency of the installation. An air leak in the hopper conveyor may cause dust to be drawn up the stack. The draft in the treaters should be regulated by means of the outlet damper to give a slight vacuum and thus reduce the effect of such leaks.

Bridging of Chemicals

The precipitated chemical is rapped from the electrodes and drops into the hopper, from where it is removed by a screw conveyor. After a long period of operation, large quantities of the chemical are found to have built up as a solid crust along the junction of the concrete wall of the treaters, and the upper edge of the hopper. It forms a hard grey-black substance which has, on several occasions, bridged across to the high voltage curtains and grounded them. It was necessary to enter the treater to pry it loose. The build-up was worse during cold weather, and we think that it may have been caused by condensation running down the cold walls. The remedy would demand insulation of the outside walls, which is rather expensive.

Discharge Electrode Rappers

The discharge electrode rapping equipment has some important mechanical improvements over older installations. The swinging ball system of rapping the high voltage curtains has been abandoned. The new design consists of an air hammer mounted directly on the curtain support members, and therefore at operating voltage. The air supply is brought through a restricted passage in the center of one of the suspension insulators and thence by a flexible metalic hose to the rapper. The striking mechanism is made up of a cylinder, piston and nozzle plate. The nozzle plate divides the cylinder into two parts, the lower part forming a small air reservoir. When at rest, the weighted piston covers the nozzle in the plate, thereby closing off the top portion of the cylinder from the lower part. When supply air is admitted into the lower cylinder, nothing happens until the pressure reaches approximately 60 pounds p.s.i., then the piston suddenly lifts from the nozzle, admitting air into the upper cylinder and the piston is driven upwards against the hammer. The resulting hammer blow vibrates the discharge electrode curtain supports and loosens the collected dust. As the piston reaches its upper limit of travel, it passes the exhaust ports, discharging the air, then it drops back to seal the nozzle again. The principal is somewhat similar to that of a pressure relief valve. The insulator serves two purposes, that of supporting the curtain and of providing an insulated passage for the air supply. The insulator is supported by an airtight collar near its mid-point. The whole upper half is enclosed in an air-tight dome which forms an air reservoir, the outlet being through the hollow support rod extending down the center of the insulator. The air supply into the dome is controlled by a solenoid valve, which opens once during the rapping cycle. The number of raps delivered by the rapper is determined by the area of the passage through the support rod, the volume of air in the dome, and its pressure. The solenoid valve does not open on each rap, as is the case with other rapping systems. It was breakage of the insulators just below the supporting collar which gave so much trouble at the start-up of the mill.

Each treater has three discharge curtain rappers. There are four support insulators, the fourth being used for the high voltage cable connection. These rappers have given very little trouble, which is fortunate since they cannot be reached for servicing except during a shutdown.

Collecting Electrode Rappers

The collecting electrode rappers are of the air cylinder-piston type. They are simpler in construction and are mounted in the floor over the treater where they are readily accessible. The rapper is supported by means of yokes on top of the collecting electrode support channels. Solenoid valves control the air supply to the piston. The piston lifts a weight which strikes the underside of the curtain supports and vibrates loose the precipitated chemicals. The rapper operates once for each opening of the solenoid valve. There are five rappers in each section, controlled by two solenoid valves. The collecting rappers require more maintenance, due to more frequent operations. All fastenings have to be well secured to avoid loosening from the vibration. The chief complaint is sticking, due to dirt and corrosion, much of the corrosion occurring during shutdowns, as mentioned previously. The best remedy is routine inspection and servicing, and a clean air supply. The latter can best be achieved by installing a strainer in front of each solenoid valve. This is recommended by the manufacturer.

Rapper Control

The functioning of the rapping equipment is automatically controlled by means of a repeat cycle program timer. The selection of time intervals and amount of rapping has been increased over the original settings by means of trial and error, to produce adequate clearing of electrodes without undue over-rapping which would only wear out equipment to no avail. The solenoid valves occasionally give trouble, from wear and from dirt in the air supply. It is important that the air lines be large enough to avoid excessive pressure drop, otherwise the effectiveness of the rappers is greatly reduced.

High Voltage Cables and Potheads

One of the most expensive and aggravating sources of trouble in the Port Alberni installation has been breakdown in the insulation of the high-voltage armored cables at or near the pothead on the rectifier end. The first treater section has given most of the trouble. At first, the blame was placed on faulty pot-head installation and rough treatment of the cable during construction. The second section operated at higher voltage but gave only a small amount of trouble. The last section operates at maximum voltage, but has given no trouble at all. The frequency of cable breakdowns seemed to be roughly proportional to the amount of arcing in the treaters. Therefore, it was suspected that other factors were involved which might include resonant relationships of capacitance, inductance and resistance at high frequencies, set up by sudden voltage discharges. The first section always showed signs of being slightly overloaded even on minimum tap settings. There was considerable arcing at the rectifier brushes accompanied by frequent sparking across the polarity gap, corresponding to the treater arcs. The transformer was already operating at the lowest tap and adding more series resistance in the primary was of no help, due to the low amperage prevailing at minimum tap settings. We felt that the treater was operating just above its optimum voltage, but due to a high primary voltage on the power system, nothing could be done from the operating standpoint.

Radio Interference

Meanwhile, we were getting complaints of radio interference from the Department of Transport Radio Inspectors. By trial and error, the source of the radio static was traced to the previously mentioned treater. Various methods of shielding were tried with only slight improvement. We then began to reason that the cable breakdowns and the radio interference would probably have a common cause. We found by tests that the occasional arcing between the collecting and discharge curtains in the treaters was the direct source of the static. We assumed that these arcs set up a high frequency transient voltage wave which was transmitted back through the power cable to the rectifier. Here it was blocked by radio interference choke coils. However, the peak voltages in the cables were probably many times greater than normal operating voltages, and being of very high frequency, would no doubt damage the cable insulation in due time. Working on this theory, we made up experimental air-core choke coils and installed them in the insulator domes at the treater ends of the cables by removing the combination disconnect grounding switches. No further breakdowns have occurred and the discharges at the polarity gaps also disappeared, thereby tending to substantiate our theory. Unfortunately, the radio interference problem was not cured by the choke coils. The static was still broadcast through the walls of the treater. The reinforced concrete was not an adequate shield. The radio trouble has been almost completely eliminated on

the offending section by placing a 5 K.W. resistor in parallel with the transformer primary. This resistor draws current through the series resistors, thereby having the effect of lowering the applied voltage at the transformer to a point where good operation is obtained. The dissipated heat serves to maintain the control room in a drier condition. The other succeeding treaters have not caused the same sort of trouble, due to the fact that the first section removes a good share of the chemical from the flue gas. They can operate, therefore, at higher voltage without undue arcing. We are not yet in a position to say whether or not there is any gain in efficiency from operating at maximum voltages.

Cable and Pothead Repairs

The occurrence of the breakdowns in the high voltage cables presented a difficult problem. None of our electricians had previously installed a pothead on a 60,000 volt oil-filled, paper-insulated, lead-covered, armored cable. However, they succeeded on their first attempt, and after several similar pothead repairs, they became quite expert. The difficulty can be imagined when one realizes that once started, the job must be completed without undue delay. It takes about eight hours, including final pouring of compound. During this time, moisture must be carefully excluded from the open cable — even perspiring hands would ruin the job. The majority of cable failures occurred close to the rectifier pothead, so that the pothead was merely reinstalled farther back on the cable. Finally, one cable failed near its midpoint. Rather than install a new cable, an attempt was made to repair the damaged insulation. The armor and lead were stripped back on either side of the fault and then the paper insulation was carefully peeled back with a gradual taper. Fresh oil-impregnated cambric tape was lapped into place and the final lead protecting sleeve was soldered into place. The armor was not replaced, but the gap was bridged with copper conductor, to complete the armor bonding. This splice has held for several months, and we hope that the choke coils will eliminate the cause of further damage. In addition, we are concentrating on keeping the operating voltages below the arcing point.

Furnace Operation

Furnace operation undoubtedly has a considerable effect on the precipitator. When operated at peak capacity, the chemical carry-over is at a maximum. At all times, liquor viscosity and pressure at the burner tips, size of nozzle tip, oscillating arc, or adjustment of primary and secondary air ports may contribute to unnecessary carry-over. This is demonstrated by dirtying of the upper furnace passes, increased solids from the cascade evaporators and increased return from the precipitators. Naturally, such carry-over should be kept at a minimum. Even though the overall efficiency of the treaters does not suffer, the amount of chemical going up the stack is roughly proportional to the amount entering the precipitator. We have had occasions when the rappers could not jar loose the saltcake faster than it was being collected. The rapping may have been faulty at the time, but excessive carry-over may also have been occurring. Visual evidence of carry-over is best demonstrated by the "rough" operation of the rectifiers when the boiler soot-blowers are being used, or when chemicals are being shovelled into the furnace.

Protection of Treaters

The problem of corrosion was previously mentioned. We have experimented with the use of Heresite paints on the inside of the treater and hopper steel-work. The results have been very gratifying. There are few signs of corrosion as yet. However, if it were possible to avoid all condensation at any time, there should be no danger of corrosion. This requires a great deal of study. It involves elimination of leaks and adequate use of insulation, but most particularly, the conditions prevailing during the shut-downs must be avoided.

Efficiency Tests

The test procedure, as developed by the manufacturer, is rather an involved undertaking. The gas flow, particularly in the inlet duct, and to a lesser extent in the outlet duct, tends to stratify so that the velocity of flow and chemical content varies considerably in various sections of the duct at different times. Therefore, a number of tests across the cross-section of the duct must be averaged for an accurate efficiency determination. The installation of a weightometer in the conveyor from the hoppers would be a very worth-while addition in that it would give an actual measure of the chemical recovered. It would then be necessary to ascertain by filtration only the losses in the outlet duct in order to obtain an efficiency result. This latter method of efficiency determination lends itself to better accuracy due to the light chemical load and decreased stratification in the outlet gas. In other words, the percentage error should be less when measuring outlet gases than that encountered when measuring inlet gases. The weightometer would eliminate the latter test.

The acceptance tests made by representatives of the Precipitation Company of Canada may be taken as representative of the precipitator performance. In spite of irregular operation of the recovery furnace at less than maximum rating, and fluctuating primary voltage supply, the average collection efficiency was 92.3 percent for an average gas volume of 62,100 C.F.M. Interpolating to rated gas volume of 78,000 C.F.M., the average efficiency was 87 percent. The above results correspond to 105.5 to 157.5 pounds of saltcake recovered per ton of pulp, based upon 165 tons per 24 hours. Therefore, the installation recovers as much as 26,000 pounds of chemical per day, depending upon operating conditions. The saving represented is about $260 per day. The above average includes poor results taken under adverse conditions, and we think that actual efficiencies can be much better when all components are operating at peak performance.

A sample analysis of recovered chemical is moisture, 0.18 percent, insolubles, 0.42 percent, organic, 0.52 percent, sodium sulphate, 78.6 percent, and sodium chloride 13.9 percent. A typical orsat test is carbon dioxide, 12.5 percent, carbon monoxide, 0.1 percent, oxygen, 7.6 percent, and nitrogen, 79.8 percent. The high content of sodium chloride is an interesting peculiarity of most Pacific Coast Mills. It is explained by the saltwater immersion of the logs.

Efficiency and gas analysis tests are essential if an intelligent working knowledge of the recovery furnace operation is to be gained. Unfortunately, we have not yet been able to establish these tests on a routine basis, but not because their importance is unappreciated.

Summary

In spite of certain difficulties, it must be admitted that the unit is operating very well. Many of our troubles have developed due to circumstances not foreseen when the equipment was ordered, and lack of experience may have contributed somewhat to difficulties which might have been avoided.

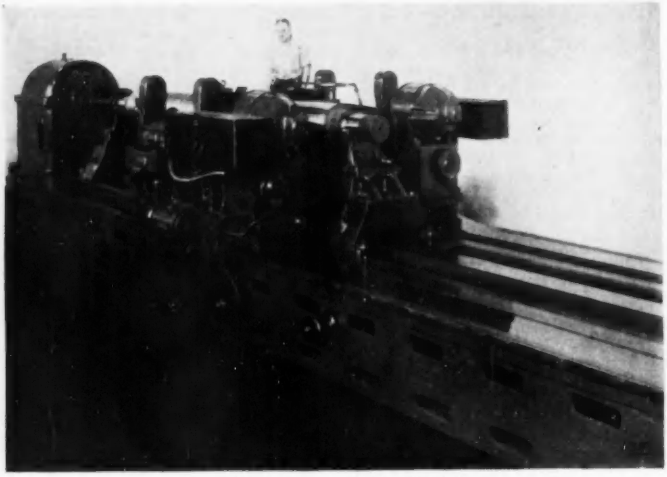
The outstanding features which bear improvement, judging from our experience so far, would be damper construction, high-voltage cable protection by means of high frequency suppressors at the treater ends, and finally, either steel walls for the treaters or grounded heavy wire netting imbedded in the concrete as a means of shielding for radio interference. In colder climates, the problem of insulation would be very important.

In conclusion, it can be stated that the Cottrell Precipitator fulfills a very vital function in the modern Kraft Mill. The economics of chemical conservation, and the elimination of fume nuisance cannot be completely matched by any other system of recovery furnace gas treatment.

Farrel-Birmingham Two-Wheel Roll Grinder

Since the improved Farrel two-wheel roll grinder was first developed by the Farrel-Birmingham Co., Inc., Ansonia, Conn., late in the year 1946, eighteen of these machines have been delivered and placed in operation in paper mills in the United States and Canada.

All of the machines are reported to be performing excellently, and users have commended the grinder for its efficiency in handling all types of work,



Farrel-Birmingham two-wheel Roll grinder.

from heavy roughing to grinding the finest finishes.

Maintenance is reported to have been negligible in each installation, although the kind and amount of work has varied widely in grinding rolls used in the complete range of paper production, from the heaviest weights of liner and box board to the thinnest tissue papers.

The key design feature of the grinder is the exclusive swing-rest principle, which, with the use of two grinding wheels of large diameter mounted on heavy, rigid spindles, is largely responsible for the superior accuracy of the machine.

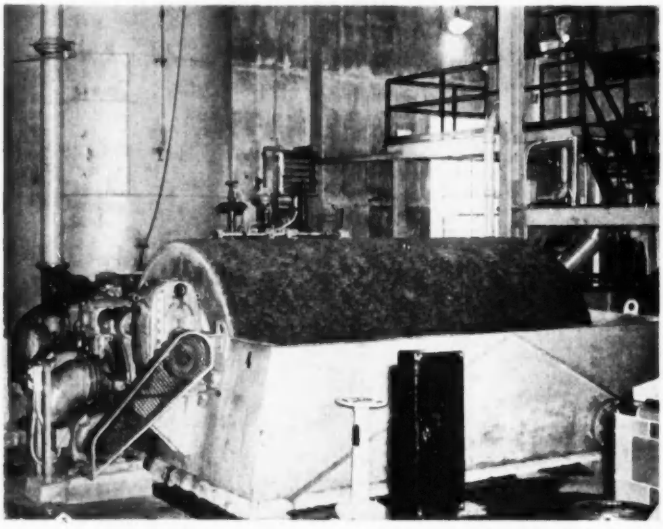
Rolls can be ground to the concentric accuracy which present high-speed paper production demands, and crown shaping is precisely governed by a patented automatic device which can be easily set to produce the exact crown desired.

Other features that have been reported on favorably include the elimination of the overhead wheel drive, flexibility of operation provided by adjustable-speed electric drive, adequate capacity for the heaviest work, the wide carriage traverse speed range, and the facility with which grinding wheel changes can be made. The Farrel two-wheel roll grinder is made in two sizes to grind rolls up to 32″ and 42″ diameter, in any lengths desired. Delivery of the machine presently is estimated at five months from receipt of order.

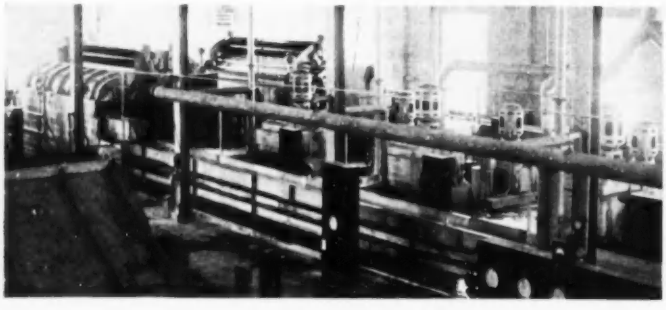
Brown's New La Tuque Mill Bleachery

Brown Corporation at La Tuque, Que., recently brought into production a 300-ton bleachery, thereby providing the newest and most modern production facilities for the manufacture of Cellate — Brown Corporation's well-known brand of Bleached Kraft. (Until recently, Cellate had been produced entirely in the unit formerly known as the "Special Fibre Plant" which was the pioneer among Kraft bleacheries.)

The new bleachery is equipped with a six-stage bleaching process consisting of a combination of continuous and batch, high density and low density, bleaching. The building in which this process is housed is of three floor levels of structural steel and concrete construction with a Haydite roof deck.



Above, Figure 1. Sherbrooke thicker in foreground. Brammer regulator and stock meter in upper corner.



Left, Figure 2. High density washers for bleaching and caustic extraction stages.

The bleach towers are lined with Stebbins acid-proof tile and the washers between each stage are Sherbrooke vacuum pulp washers. Consistency of intake to the plant is controlled by a Brammer regulator. The washers are equipped with P.I.V. variable speed drives. Link-Belt conveyors transport

the high density stock. All instruments and controls are mounted on panels located on the operating floor, adjacent to the related equipment. Instrumentation includes Fischer & Porter flowrators, Kamyr dilution controllers by Foxboro and other instrumentation by Bristol.

Construction was carried out by the Foundation Company and A. D. Ross Company. The Brown engineering staff, working in cooperation with Operating and Research Departments and with Mr. O. C. Schoenwerk as Consultant, handled the planning and engineering.

Brown Corporation's expansion of bleaching facilities began over a year ago, when a super-modern bleachery was built for the production of its various Solka pulps. That modern addition has been in operation since August 1948. The combined bleachery capacity now allows Brown Company to bleach into Cellate and Solka grades its entire digester capacity (450-500 tons per day) making La Tuque the largest bleached pulp mill in Canada.

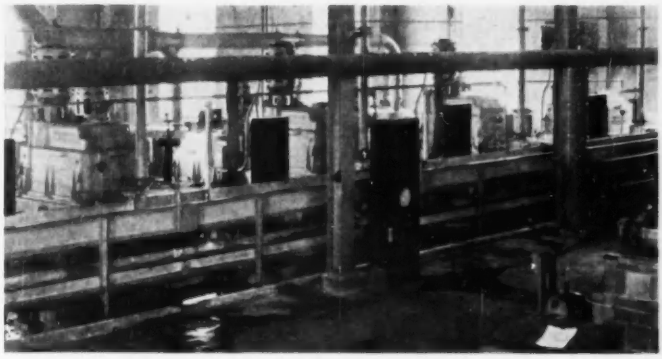


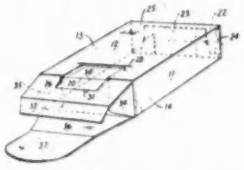
Figure 3. Conveyor belt feeding high density caustic extractors. Agitator motors in background.

Patent Abstracts

● ***In addition to abstracts on the technology of pulp, paper and related industries, miscellaneous abstracts which may provide useful information are included.***

2,472,183 — Container. Marshall I. Williamson, New Haven, Conn., assignor, by mesne assignments, to National Folding Box Company. Filed October 23, 1945—Issued June 7, 1949.

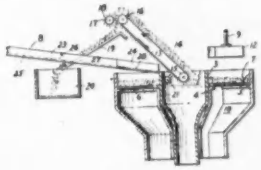
A folding box or carton comprising enclosing side walls, and panels forming end walls,



one of said end walls comprising an inner end panel hingedly conected to one of the side walls along a fold line, said inner end panel and said one side wall having a flap cut therefrom hinged to said inner end panel providing upon folding of the flap an inspection aperature extending across said fold line; side flaps hingedly connected to side walls adjoining said one side wall; means for securing said inner end panel in carton contents retaining position; an outer end panel hingedly connected to a second side wall opposite said one side wall; an end flap, wider than said aperature, hingedly connected to said outer end panel, said outer end panel and said end flap being adapted to overlie and cover said inspection aperture, said one side wall having a slit therein extending substantially from the end edge of said cut flap, said end flap being insertable through said slit to maintain said outer end panel and end flap in aperture covering position, said slit extending beyond the width of said cut flap.

2,472,324 — Apparatus for Handling Liquid Suspensions. Dan B. Wicker, Dunbar, and Charles W. Cox, St. Albans, W. Va., assignors to American Viscose Corporation, Wilmington, Del. Filed April 4, 1944 — Issued June 7, 1949.

In an apparatus which comprises a rotating foraminous annular surface disposed in a horizontal plane and a trough inclined from the ver-



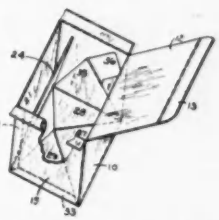
tical for depositing a liquid suspension of particulate material thereupon so that the amount of suspension deposited on any given unit width of the annular surface is directly proportional to the relative linear velocity of such unit, said trough having a delivery edge the projection of which on the annular surface effectively defines substantially an arc of a circle and the locus of the center of which circle lies on the annular surface on a radial line through the center of said surface extending at a right angle to the longitudinal axis of the trough, and the termini of which arc coincide with the inner and outer peripheries of the annular surface, the locus of points on said arc being ascertainable from the equation

$$(R_1^3 - R_0^3) = K\ W$$

(where R_0 is the inside radius of the annular surface and K is a factor determinable by substituting in the equation the outside radius of the annular surface for R_1 and the width of the trough for W) by dividing the width of the annular surface into a number of portions between imaginary concentric circles and substituting the value of the radius of the outer circle defining each portion for R_1 in said equation, solving for W, and dividing the trough into parallel, longitudinally extending strips between imaginary lines spaced from the edge of the trough which extends to a point above the inside periphery of the annular surface distances corresponding to the values of W obtained, the intersections between the imaginary concentric circles and vertical planes through said parallel imaginary lines constituting the loci defining the arc.

2,472,698—Knockdown Carton. Anthony G. Edtmiller, Milwaukee, Wis., assignor to Hummel and Downing Company, Milwaukee, Wis. Filed September 20, 1947—Issued June 7, 1949.

A collapsible carton comprising four side wall

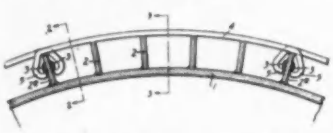


panels having hinged corner connections with each other, a triangular bottom panel in hinged connection with one of said wall panels and defined by score lines extending diagonally from two of said corners, second and third triangular bottom panels connected with the bottom panel first mentioned upon the respective score lines aforesaid, a gluing flap hingedly connected marginally with the second triangular bottom panel and adhesively connected with one of said walls, and a supporting panel having a hinged connection with the third triangular bottom panel and extending upwardly therefrom in immediate proximity to a wall of the carton opposite that with which the gluing flap is connected, an intermediate wall of the carton opposite that with which the first triangular bottom flap is connected being provided with a false bottom resting upon the several bottom flaps and marginally abutting the supporting and gluing flaps.

2,472,558 — Rotary Drum Filter. Orville B. Ackerly, Jr., Piedmont, Calif., assignor to Oliver United Filters Incorporated, Oakland, Calif. Filed December 27, 1945—Issued June 7, 1949.

A drum of a rotary drum filter comprising: a plurality of peripherally spaced, longitudinally extending division strip bars secured and sealed to said drum and each provided on each of its

sides with a longitudinally extending shoulder; and a plurality of rods overlying each successive pair of division strip bars transversely thereof,



each end of each of said rods terminating in a downwardly and inwardly extending hook and each of said hooks being detachably secured under one of said shoulders.

2,472,790 — Method of Preparing Starch Paste. James P. Casey, Decatur, Ill., assignor to A. E. Staley Manufacturing Company, Decatur, Ill., a corporation of Delaware. Filed April 20, 1946—Issued June 14, 1949.

The method of preparing an enzymethinned starch paste which comprises providing a slurry of water, starch-liquefying enzyme, and a plurality of starches modified in such manner that their enzyme-converting temperatures are lowered around 15° F., said starches being so selected that there is a difference between the enzyme-converting temperatures of every pair thereof, heating the slurry to the enzyme-converting temperature of the starch having the lowest enzyme-converting temperature, maintaining the slurry temperature at this value until the corresponding starch has been thinned by the enzyme, raising the temperature of the slurry to the enzyme-converting temperature of the starch having a next higher enzyme-converting temperature, maintaining the slurry at the elevated temperature until the corresponding starch has been thinned by the enzyme, but below the inactivation temperature of the enzyme, until the starches therein have been progressively thinned by the enzyme.

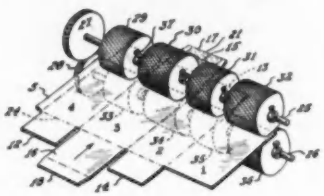
2,472,877—Washing Cellulose. John William Allquist, Rome, Ga., assignor, by mesne assignments, to Celanese Corporation of America, a corporation of Delaware. Filed June 28, 1944—Issued June 14, 1949.

The improved method of washing cellulosic fibers to remove calcium, magnesium, sodium and other cations normally found in industrial water and absorbed or taken up by the cellulose from the water which comprises washing the cellulose with ordinary salt-bearing industrial water acidified with an inorganic acid to a pH of from 2 to 5 to loosen and displace said cations, and then washing out the displaced cations and the acid with demineralized water.

2,472,883 — Method and Apparatus for Producing Cartons. Samuel Bergstein, Cincinnati, Ohio, assignor to Robert Morris Bergstein and Frank David Bergstein, trustees. Filed September 12, 1946—Issued June 14, 1949.

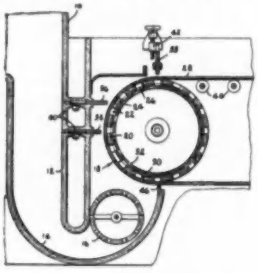
A process of producing protective cartons which comprises providing otherwise completed carton blanks including enclosing body walls in articulation along longitudinal score lines and a glue flap, embossing central portions of body walls of said blank while leaving said blank unembossed in areas adjacent and including said longitudinal score lines a free edge of a wall at one side of the blank and said glue flap, and thereafter tubing said blank by folding with the application of adhesive, and producing pressure on said glue flap and the free edge of said wall in superposition by pressure means acting from the outside of the blank against a rib-like support located interiorly of the tubed blank.

In apparatus for the purpose described, parallel shafts, means for driving said shafts in timed relationship, pairs of rotary embossing



2,473,069 — Apparatus for Manufacture of Paper. Nicholas J. Niks, Munising, Mich. Filed April 27, 1945—Issued June 14, 1949.

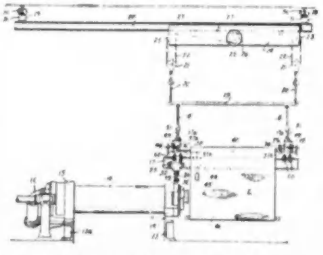
The combination in a paper making machine of a rotatably supported breast roll, a wire belt supported thereby and contacting the same over



substantially half of its periphery, means for supplying paper stock to said belt, means comprising a plurality of slices for controlling the thickness of the layer of paper stock which is carried away by said belt, and means for controlling the moisture content in said layer comprising perforations in said roll, an adjustable valve member within said roll for adjustably effecting fluid communication with the greater portion of the perforations in the said one-half of the periphery of said roll, and conduit means for supplying fluid to the interior of said valve member.

2,473,100 — Paper Machine Wire Stringing Device. Lloyd Hornbostel, Beloit, Wis., assignor to Beloit Iron Works, Beloit, Wis. Filed June 14, 1944—Issued June 14, 1949.

In combination a paper making machine of the Fourdrinier type having a couch roll with a



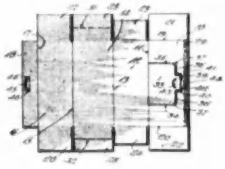
removable front bearing support for opening up a gap accommodating passage of a forming wire, an overhead crane movable longitudinally and laterally of the machine, a wire bundle carrier suspended from said crane, spreader poles on said carrier for holding a portion of a forming wire from a bundle on the carrier in an open depending loop large enough to freely encompass the couch roll, a dolly movable longitudinally on said carrier in said loop for suspending the front of the couch roll to maintain said gap, and said crane arranged to move the carrier laterally for conveying an open wire loop thereon into the line of the machine to encompass the couch roll while said dolly rides on the carrier within the loop.

2,473,190 — Method of Producing Fibrous Building Compositions. Charles M. Baskin, Toronto, Ontario, and Norman W. McLeod, Sarnia, Ontario, Canada, assignors to Standard Oil Development Company. Filed July 1, 1944—Issued June 14, 1949.

A method of preparing a building composition which comprises breaking up a fibrous material into a state of fine subdivision, adding about ½ part of a flux oil to about 1 part of the divided fibrous material, adding an alkaline solution to the mixture of fibrous material and flux oil, digesting at 100 lbs. per square inch steam pressure for two hours the fibrous material, flux oil and alkaline solution to form a fibrous pulp, dispersing in the fibrous pulp and asphalt and flux oil, picking up the mixture of fibrous material, flux oil and asphalt in layers on a continuous blanket to form sheets, and submitting the said sheets of fibrous material, asphalt and flux oil to pressure and heat to remove water.

2,473,492—Reclosable Carton. Frank C. Shina, Thomson, N. Y., assignor to United Board & Carton Corporation. Filed August 1, 1945—Issued June 14, 1949.

A blank for reclosable cartons comprising a rectangular bottom panel having sides and ends, front and rear side panels extending from the sides of the bottom panel and divided therefrom by fold lines, and panels extending from the ends of the bottom panel and divided therefrom by fold lines, a sealing strip extending from the free



edge of the front side panel and divided therefrom by a fold line, a top panel extending from the free edge of the rear side panel and divided therefrom by a fold line, and flaps extending from the ends of the front and rear side panels and divided therefrom by fold lines, said top panel having window portion extending from the fold line between the top panel and the rear side panel, said window portion being partially severed toward the free edge of the top panel and being divided along weakened lines running from the partially severed part back to the fold line between the top panel and rear side panel, said window portion having a partially severed tab adjacent the free edge of the top panel, said sealing strip having a locking tab adiacent its free edge and divided by a severed substantially U-shaped line, and end flaps extending from the ends of the top panel and divided therefrom by fold lines.

FINANCIAL RECORD •

	Per Share Earnings		Indic.	Nov. 7
	Calendar Year 1948	12 Mo. to Approx. 9/30/49	Annual Divid. Rate	Approx. Market Price
PREFERRED STOCKS				
Armstrong Cork Co. $3.75 Cum.	$46.33*	$38.47*a	$3.75	$99⅜
Armstrong Cork Co. $4.00 Cum. Conv.	46.33*	38.47*a	4.00	112½
Celotex Corp. 5% Cum.	26.42c	10.33p	1.00	17⅜
Champion Paper & Fibre $4.50 Cum.	99.97f	19.91j	4.50	95¼
Container Corp. of Amer. 4% Cum.	105.41	90.43	4.00	100¼
Crown Zellerbach $4.20 Cum.	63.92i	61.00p	4.20	101⅞
Crown Zellerbach $4.00 Cum. Conv. 2nd	60.56i*	57.90p*	4.00	99½
Dixie Cup Co. $2.50 Cum. Conv. Cl. A	10.10	10.44	2.50	52½
Flintkote Co. $4 Cum.	83.25	61.44	4.00	103⅝
Robert Gair Co., Inc. 6% Cum.	17.08	12.88	1.20	17⅜
International Paper Co. $4 Cum.	263.00	254.71	4.00	102
Johns-Manville $3.50 Cum.	209.89	204.89	3.50	116
Kimberly Clark Corp. 4½% Cum.	80.74	74.36a	4.50	101¾
Kimberly Clark Corp. 4% Cum. Conv. 2nd	41.59*	44.25*	4.00	103½
MacAndrews & Forbes 6% Cum.	62.23	64.10	6.00	138¾
Mead Corp. 4¼% Cum.	73.46	49.00k	4.25	92¾
Mead Corp. 4% Cum. Conv. 2nd	29.91*	19.93k*	2.00	33½
Paraffine Cos. Inc. 4% Cum. Conv.	156.11	74.77	4.00	102½
Rayonier Inc. $2 Cum.	16.43	10.76	2.00	31
St. Regis Paper Co. 4.40% 1st A	79.90	34.21	4.40	84¾
Scott Paper Co. $3.40 Cum.	59.06	52.36	3.40	97¼
U. S. Gypsum Co. 7% Cum.	314.45	281.64	7.00	186½
United Wallpaper Inc. 4% Cum. Conv.	(d)0.79	15.43	2.00	24⅞
West Virginia Pulp & Paper 4½% Cum.	79.45c	69.93p	4.50	107
COMMON STOCKS				
APW Products Co.	$0.73	(d)$0.56a	(m)	3⅛
American Writing Paper Corp.	(d)0.15	0.05	$0.25	6⅝
Armstrong Cork Co.	7.54	6.13a	3.00	46⅝
Celotex Corp.	7.21c	2.75p	1.00	18⅝
Certain-Teed Prods. Corp.	4.02	3.21a	1.00	14
Champion Paper & Fibre	8.70f	1.70j	2.00	27⅜
Congoleum Nairn Co.	5.78	4.92a	2.25	30¼
Container Corp. of America	10.12	8.50	4.50	38⅞
Crown Zellerbach	7.16i	6.68p	2.00	28½
Dixie Cup Co.	6.70	7.00	1.50	35¼
Eastern Corp.	4.76	1.27a	(h)	15
Flintkote Co.	5.86	4.14	2.50	29⅛
Robert Gair Co., Inc.	2.67	1.96	0.70	7
Great Northern Paper Co.	4.63	5.32a	2.80	39¼
International Paper Co.	16.73	16.19a	5.00	64⅜
Johns-Manville Corp.	5.22	5.07	2.00	43½
Kimberly Clark Corp.	5.02	4.55a	1.65	23¼
MacAndrews & Forbes Co.	3.68	3.79	2.50	36½
Marathon Corp.	4.11c	3.42a	1.40	23½
Mead Corp.	6.36	3.98k	1.00	13
National Container Corp.	2.28	1.38a	0.40	7½
Paraffine Cos. Inc.	2.45	1.15	1.20	17⅞
Rayonier, Inc.	9.09	5.52	2.00	24½
Ruberoid Co.	11.80	9.37	3.25	56¾
St. Regis Paper Co.	2.71	1.02	0.60	7⅜
Scott Paper Co.	4.15	5.38	3.00	63¾
Sutherland Paper Co.	6.02	5.12	2.50	35½
Union Bag & Paper Corp.	9.17	5.36	3.00	26¾
United Board & Carton	2.04b	(d)1.72g	(e)	8⅛
U. S. Gypsum Co.	15.04	13.43	6.00	104⅛
United Wallpaper	(d)0.10	0.42	(n)	3¼
West Virginia Pulp & Paper	11.33c	9.70p	3.00	46

(a) 12 months to approximately 6/30/49
(b) Year ended 11/23/48
(c) Year ended 10/31/48
(d) Deficit
(e) Omitted dividend 2/4/49
(f) 11 months to 3/31/49
(g) 12 months to approximately 8/20/49
(h) Directors took no action on August, 1949 dividend—last payment 5/2/49
(i) 12 months to approximately 1/30/49
(j) 3 months to 6/30/49
(k) 12 months to approximately 10/2/49
(m) Directors took no action on July, 1949, dividend—last payment 1/10/49
(n) Last payment 25c, 9/16/47
(p) 12 months to approximately 7/31/49
(*) Earnings per combined preferred shares.

Dividends Declared

Hollingsworth & Whitney has declared a dividend of 62½ cents a share on its common stock, payable December 12, to holders of record December 2, and a regular quarterly dividend of $1 per share on its $4 cumulative preferred stock, payable January 1, to holders of record December 16.

National Container Corp., of Delaware has declared a quarterly dividend of ten cents per share on its stock, payable December 10, to holders of record, November 15.

Barber-Ellis of Canada, Ltd., has declared a dividend of 50 cents, payable December 15 to holders of record November 30.

Marathon Corp., has declared a common stock dividend of 35 cents a share, payable November 30, to holders of record November 10, and a preferred dividend of $1.25 a share, payable January 2, to holders of record December 20. Amounts of both dividends are net after provision for Wisconsin privilege dividend tax.

Abitibi Power & Paper Co., has declared an extra dividend of 25 cents per share on its common stock, payable December 1 to holders of record November 1, and a regular dividend of 50 cents per share, payable January 1, to holders of record, December 1.

Maclaren Power & Paper Co., Ltd., has declared a dividend of 50 cents a share on its common stock, payable November 30 to holders of record November 5.

Champion Paper & Fibre Co., has declared a dividend of 50 cents per share on its common stock, payable December 1 to holders of record November 12.

Donohue Brothers, Ltd., has declared a dividend of 25 cents per share on its common stock, payable December 1, to holders of record November 15.

Scott Paper Co., has declared a dividend of 75 cents per share on its common stock, payable December 12.

Building

- **FOR THE PAPER INDUSTRY**
- We design, build, and equip paper and pulp mills ... steam generating plants ... and facilities for eliminating stream pollution.
- Under one contract and one responsibility, we deliver jobs complete, ready for operation.
- We also furnish engineering reports and surveys. Current cost data available at all offices.

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INDUSTRIAL ENGINEERS AND BUILDERS

THE FERGUSON BUILDING • CLEVELAND, OHIO
OFFICES IN NEW YORK, HOUSTON, CHICAGO, CINCINNATI AND LOS ANGELES

PRICES . . . . . .

The prices below reflect general market quotations applying to those standard grades in which the normal volume of business is being done.

NEW YORK

Delivered New York

Standard News, per ton—

Rolls, contract	$100.00/	—
Sheets	115.00/	—

F.o.b. Mills, Carload freight allowed, dock N. Y.

Kraft— per cwt., 40# base wgt.

Standard Wrapping Rolls	$6.50/	—
No. 1 Wrapping Rolls	7.25/	—
Standard Bag	6.00/	—

Tissues— per ream 24x36 (480) 10 lbs. 2500 lbs. or more

Wh. No. 1 Frd.	$155.00/	—
Wh. No. 1 M. G.	150.00/	—
Wh. No. 1½	140.00/	—
Wh. No. 2	120.00/	—
Kraft Anti-Tar	1.37½/	—
Shrd. Wh. No. 1 per lb.	.11½/	—

Toilet— per case of 100 rolls—1 M sheets.

Unbleached 4½x4½	$5.75/	—
Bleached 4½x4½	6.95/	—
Bleached 4½x5	8.80/	—
Per Case of 50 rolls—2000 sheets		
Unbleached 4½x4½	$5.75/	—
Bleached 4½x4½	6.80/	—
Per Case of 100 rolls—1000 sheets		
Facial, 4½ x 5, 2 ply	$8.95/$9.45	

Paper Towels—per case of 3750—Zone 1.

Wh. Jr. M'tif'd 9¼x9½	$5.25
Br. Sr. M'tif'd 10x12	3.60
Br. Jr. M'tif'd 9½x9¾	3.10
Br. Jr. Spl. fold 10x10¾	3.15
Blchd. 7½ x 11, 24/25 rolls	$3.95/$6.25

Manila, per cwt.

No. 1 Jute Tag 40 lb., sheets*	$15.05/$17.50
Reg. Jute M.F. Manila, sheets*	13.50/ 15.50
Wrapping Manila	8.75/ 10.50
Printing Manila	10.00/ 11.00

* Less usual allowance for rolls.

Boards, per ton—

Filled News	$77.50/ —
Plain Chip	75.00/ —
Blchd. Mla. L-d. Chip*	92.50/ —
White Pat. coated*	110.00/
Kraft Liners 42 lb.	100.00/
Kraft Corr. .009	105.00/
Binders Boards	110.00/116.00

* Base Prices per 10 tons. Less than 10 ton but over 3 tons, add $2.50; three tons or less, add $5; regular 35-39 basis, add $5; basis 40-49, add $2.50; basis 91-100, add $2.50; basis 101-120, add $5.

WORLD WOOD PULP MARKETS

Fourth Quarter Contract Prices, Per Short Air-Dry Ton

	Delivered, with varying freight allowances		On dock Atlantic Ports Full freight allowance		
	U. S.	Canadian	Swedish	Finnish	Norwegian
Groundwood	$65.00/ —	$65.00/ —			
Soda, Bleached	113.00/ —	113.00/ —		Competitive	
Sulphate, Bleached	118.00/126.00	126.00/ —	125.00/128.00		
Sulphate, Unbl'd North'n		82.50/105.00	82.50/ 85.00	with	
Sulphate, Unbl'd South'n	80.00/ 82.50				
Sulphite Blchd. (S'ftw'd)	118.00/ —	118.00/ —	118.00/ —	Domestic	Competitive
Sulphite, Blchd. (H'dw'd)	113.00/ —				
Sulphite, Unbleached	100.00/ —	100.00/ —	100.00/ —	Grades	
Sulphite, Unbl'd (Glassine)	105.00/ —	105.00/ —	104.00/105.00		

WASTE PAPER MARKET

Prices to Mills*, (Per Ton) F.o.b. Cars Shipping Point

	New York	Philadelphia	Boston	Chicago
	Nov. 3	Nov. 1	Nov. 1	Nov. 1
No. 1 Mixed Paper	$7.00/ $9.00	$7.00/ $9.00	$7.00/ —	$10.00/ —
Boxboard Cuts	7.00/ 9.00	6.00/ 7.00	— / 5.00	13.00/ —
Mill Wrappers	11.00/ 12.00	9.00/ 11.00	— / 9.00	12.00/ —
No. 1 News	10.00/ 11.00	9.00/ 10.00	9.00/ 10.50	16.00/ —
Over-issue News	14.00/ 15.00	12.00/ 14.00	8.00/ 10.50	19.00/ —
Corrugated Containers	13.00/ 15.00	15.00/ 17.00	14.50/ 15.50	20.00/ —
New Corrugated Cuts	18.00/ 20.00	20.00/ —	16.00/ —	23.00/ —
Double Kraft Ld. Corr. Cuts	34.00/ 35.00	30.00/ 35.00	25.00/ —	35.00/ —
Used Kraft Bags	25.00/ 30.00	20.00/ 22.00	25.00/ 30.00	20.00/ —
No. 1 Brown Kraft Paper	25.00/ 30.00	25.00/ 30.00	30.00/ 35.00	20.00/ —
Super Resorted Br. Kraft	30.00/ 35.00	35.00/ —	40.00/ —	35.00/ —
New Br. Kraft Env. Cuts	65.00/ 70.00	60.00/ 65.00	60.00/ 65.00	55.00/ —
New Br. Kraft Cuts	40.00/ 45.00	50.00/ —	45.00/ —	50.00/ —
No. 1 Gdwd. Shvs.	15.00/ 20.00	15.00/ 20.00	25.00/ —	26.00/ —
White Newsblanks	50.00/ 55.00	40.00/ 45.00	50.00/ 55.00	35.00/ —
No. 1 Flyleaf Shvs.	25.00/ 30.00	25.00/ 30.00	35.00/ 45.00	35.00/ —
No. 1 Soft Wht. Shvs.	75.00/ 80.00	60.00/ 65.00	70.00/ 80.00	55.00/ —
Super Soft Wht. Shvs.	90.00/100.00	70.00/ 75.00	80.00/ 90.00	60.00/ —
Hd. Wht. Shvs.	85.00/ 95.00	80.00/ 85.00	80.00/ 90.00	80.00/ —
Hd. Wht. Env. Cuts.	85.00/ 90.00	90.00/ 95.00	90.00/105.00	90.00/ —
New Manila Env. Cuts.	65.00/ 70.00	60.00/ 65.00	60.00/ 70.00	55.00/ —
Col. Tab Cards	30.00/ 35.00	20.00/ 25.00	35.00/ —	40.00/ —
Manila Tab Cards	65.00/ 70.00	65.00/ 70.00	75.00/ 80.00	65.00/ —
No. 1 Mixed Ledger	30.00/ 32.50	27.50/ 32.50	37.50/ —	40.00/ —
White Ledger	45.00/ 55.00	40.00/ 45.00	50.00/ 60.00	50.00/ —
Mixed Books & Mags.	7.00/ 8.00	9.00/ 10.00	12.00/ —	12.00/ —
No. 1 Rep'd Hvy. Books & Mags.	20.00/ 25.00	20.00/ —	22.00/ 23.00	23.00/ —

* Includes brokers' fee.

The following prices are representative of distributors' resale prices, all deliveries in Zone 1

Rag Content Bonds and Ledgers—

White, 20 lb.

Bonds

	4 Ctns. per cwt.
100% Rag Ex. No. 1	$51.40/$53.90
100% Rag	44.55/ 46.15
75% Rag	33.90/ 35.40
50% Rag	28.10/ 29.55
25% Rag	24.85/ 26.80

Ledgers

	4 Ctns. per cwt.
100% Rag Ex. No. 1	$52.65/$54.55
100% Rag	45.65/ 46.40
75% Rag	35.15/ 36.10
50% Rag	29.40/ 30.05
25% Rag	26.15/ 26.80

Sulphite Bonds and Ledgers

White, 20 lb.

Bonds

	4 Ctns. per cwt.
No. 1	$17.50/ —
No. 2	16.55/ 16.75
No. 4	15.60/ 15.95

Ledgers

	4 Ctns. per cwt.
No. 1	$18.80/ —
No. 2	18.05/ —

White Book

	Conversion Coated Case per cwt.
No. 1	$19.75/$20.90
No. 2	19.25/ 19.65
No. 3	17.75/ 18.90
Machine Coated	
No. 1	16.40/ 16.65
No. 2	14.40/ 15.15
Uncoated	
No. 1 Antique (Watermarked)	16.40/ 17.90
Offset	15.15/ 16.65
A Grade E. F.	15.40/ —
A Grade S. C.	15.90/ 16.15
B Grade E. F.	14.90/ 15.15
B Grade S. C.	15.40/ 15.65

Twines

All Prices Nominal, F.o.b. Mill

(Soft Fiber)	
Coarse Polished—India	.35½/ .36½
Fine Polished India	.41½/ .45
Unpolished—Paper Makers	.32¼/ .34½
Tube Rope	.33¼/ .35½
Wrapping	.36 / .38¼
Cotton	.58 / .60
Polished Cotton	.55 / —
(Hard Fiber)	
Mex. Sisal	.21 / .27
(American Hemp)	
Polished Hemp	.45 / .48
Unpolished	.35 / .37½

Rag Market

New Domestic Cotton Cuttings

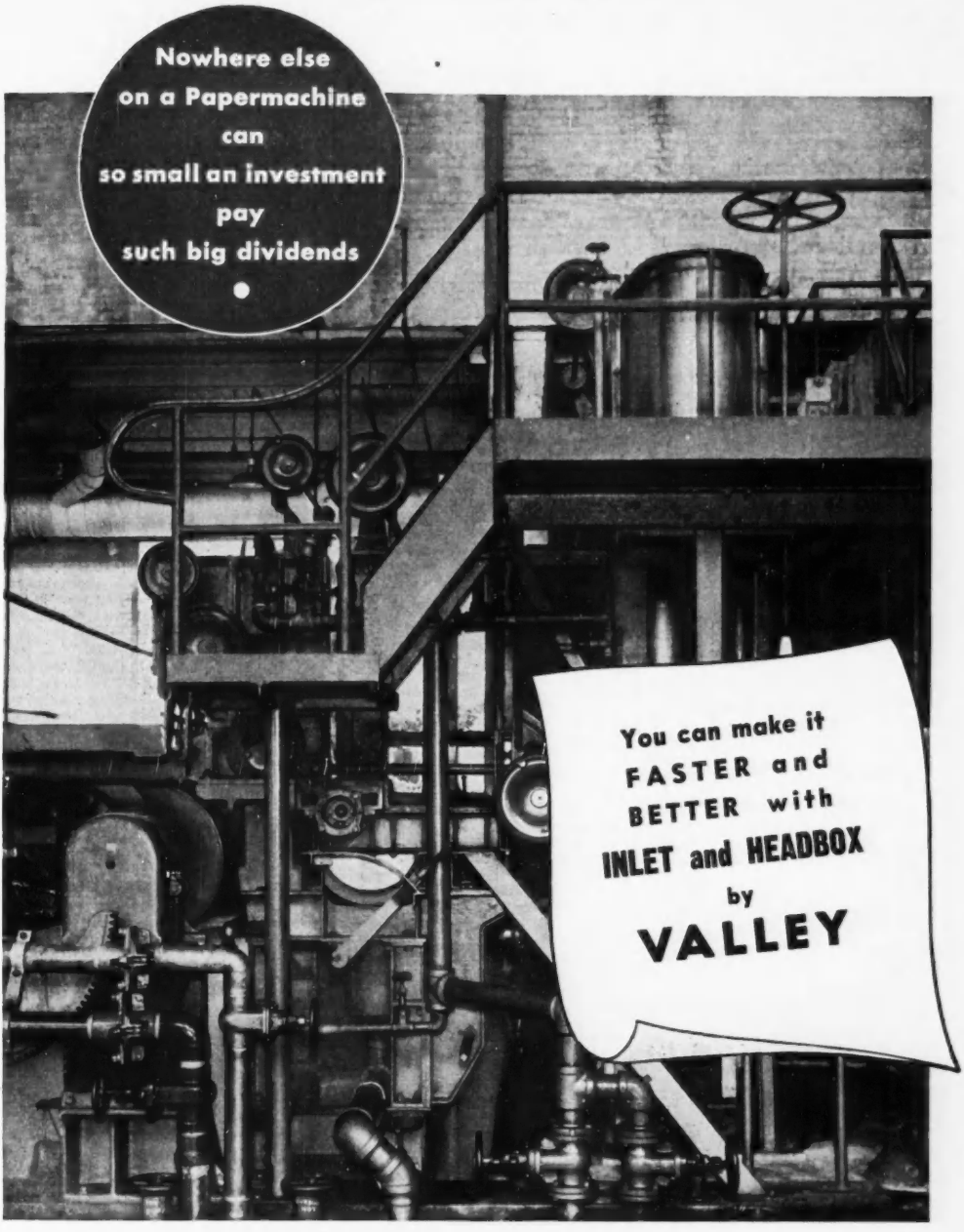
(Prices to Dealers, F.o.b. Ship. Pt.)

	Per 100 lbs.	
White Shirt	$10.00/	$10.50
Unbleached Muslin	10.00/	10.50
Light Silesias	7.00/	7.50
White Back Blue Overalls	6.25/	6.50
Blue Overalls	6.00/	6.25
Fancy Shirt	4.50/	5.00
Percales	5.50/	6.00
Light Prints	5.50/	6.00
No. 1 Washables	2.75/	3.00
Bleachable Khaki	5.00/	5.50
Unbleachable Khaki	4.50/	5.00
Cottonades	4.25/	4.75
Lt. Flanneiettes	7.00/	7.50
Men's Corduroy	3.50/	4.00
Women's Corduroy	3.00/	3.50

Old Domestic Cotton Rags

(Prices to Dealers, F.o.b. Ship. Pt.)

	Per 100 lbs.	
No. 1 Whites, Repacked	$4.25/	$4.75
No. 1 Whites, Miscellaneous	3.50/	4.00
No. 2 Whites, Repacked	2.75/	3.00



Another example of Complete Stock Entrance by

VALLEY IRON WORKS CO • APPLETON WISCONSIN

No. 2 Whites, Miscellaneous	2.00/	2.25
Cotton Pants & Overalls	2.50/	2.75
Thirds and Blues, Repacked	2.00/	2.25
No. 1 Roofing Rags	1.35/	1.45
No. 2 Roofing Rags	1.25/	1.35
No. 3 Jute Bagging	1.15/	1.20
No. 4 Brussels & hrd. Bek'd crpts.	.80/	1.00
Roofing Bagging	.80/	.95

New Foreign Cotton Cuttings

(Prices to Dealer, F.o.b. Dock, N. Y.)

	Per 100 lbs.
New Dark Cuttings	prices
New Mixed Cuttings	
Light Silesias	
Light Flanneiettes	
New White Cuttings	are
New Unbleached Cuttings	
Fancy Shirt Cuttings	nominal
Light Prints	
Bleachable Khaki, No. 1	
Unbl. Khaki, No. 1	

Old Foreign Rags

(Prices to Dealer, F.o.b. Dock, N. Y.)

	Per 100 lbs.
No. 1 White Cottons	prices
No. 2 White Cottons	
No. 3 White Cottons	
No. 4 White Cottons	
Extra Light Prints	
Old Light Prints	are
Med. Light Prints	
Dutch Blue Cottons	
Checks and Blues	
Linsey Garments	nominal
Dark Cottons, European	
Dark Cottons, Egyptian	
Old Shopperies	
New Shopperies	

Bagging

(Prices to Dealers, f.o.b. N. Y.)

	Per 100 lbs.	
Foreign Gunny	$5.50/	$6.50
Domestic Gunny, No. 1	6.75/	7.00
Heavy Wool Tares	6.50/	7.00
No. 1 Scrap Bagging	4.75/	5.00
Foreign Manila Rope	5.00/	5.25
Domestic Manila Rope	5.00/	5.25
Jute Strings	5.50/	5.75
No. 1 Sisal Strings	4.50/	4.75
Mixed Strings	1.15/	1.30

PHILADELPHIA

New Domestic Cotton Cuttings

(Prices to Dealers, F.o.b. East'n Ship. Pt.)

	Per 100 lbs.
White Shirt	$10.00/$10.50
Fancy Shirts	4.50/ 5.00
Light Silesias	6.50/ 7.00
Unbleached Muslin	9.75/ 10.25
Light Prints	5.25/ 5.75
Washable No. 1	2.50/ 3.00
Blue Overall	5.75/ 6.25
Percales	5.50/ 6.00
Bleachable Khaki	4.50/ 5.00
Unbleachable Khaki	3.25/ 3.75
Men's Corduroy	3.75/ 4.25
Ladies' Corduroy	3.25/ 3.75
Cottonades	4.00/ 4.50

Old Domestic Cotton Rags

(Prices to Dealers, F.o.b. East'n Ship. Pt.)

	Per 100 lbs.	
Mixed White	$2.25/	$3.50
Thirds and Blues Repacked	2.50/	2.75
Cotton Pants & Overalls	2.40/	2.75
No. 1 Roofing Stock	1.20/	1.50
No. 2 Roofing Stock	1.10/	1.40
Roofing Bagging	1.00/	1.10

Bagging

(Prices to Dealers, F.o.b. East'n Ship. Pt.)

	Per 100 lbs.	
Old Manila Rope	$5.00/	$5.25
Foreign Gunny No. 1	6.75/	7.00
Domestic Gunny, No. 1	6.75/	7.00
Sisal Strings No. 1	3.00/	3.50
No. 1 Scrap	4.00/	4.50
No. 1 Jute Rope	5.50/	6.00

BOSTON

Bagging

(Prices to Dealers, F.o.b. Boston)

	Per 100 lbs.	
Foreign Gunny	$5.00 /	$6.00
Domestic Gunny	5.00 /	6.00
Domestic No. 1 Old Rope	5.00 /	5.25
Foreign No. 1 Old Rope	5.00 /	5.25
Mixed Strings	1.35 /	—
Transmission Rope—Domestic	3.00 /	3.50
Jute Carpet Threads	— /	2.00
Bleachery Burlap	— /	9.00
Scrap Burlap—		
Foreign	4.00 /	4.50
Domestic	4.00 /	4.50
South America	5.00 /	5.50
Austr. Wool Pouches	6.50 /	7.00
New Zealand Wool Pouches	— /	4.00
New Burlap Cuttings	6.00 /	7.00
Heavy Baling Bagging	7.50 /	8.00
Paper Mill Bagging	— /	3.50

Domestic Rags (new)

(Prices to Dealers, F.o.b. Boston)

	Per 100 lbs.	
New Light Prints	5.75 /	6.00
Fancy Percales	6.25 /	6.50
White No. 1 Shirt	10.00 /	10.75
Light Flannelettes	— /	7.00
Canton Flannels, Bleached	— /	9.00
Underwear Cutters, Bleached	10.75 /	11.25
Underwear Cutters, Unbleached	10.00 /	10.25
Blue Overalls	6.00 /	6.50
Soft Unbleached	9.75 /	10.50
Blue Cheviots	6.00 /	6.50
Fancy Shirt	4.00 /	4.50
Washable	3.00 /	3.25
Khaki Cuttings	5.00 /	5.25
Men's Corduroy	4.50 /	5.00
Khaki Canvas	— /	5.50
B. V. D. Cuttings	10.00 /	10.25

Domestic Rags (old)

(Prices to Dealers, F.o.b. Boston)

	Per 100 lbs.	
No. 1 Whites, Repacked	$4.00 /	$4.50
No. 1 Whites, Miscellaneous	2.50 /	3.00
Twos and Blues, Repacked	2.50 /	2.75
Cotton Pants & Overalls	2.50 /	2.75
No. 1 Roofing Stock	1.75 /	1.80
No. 2 Roofing Stock	1.50 /	1.55
Roofing Bagging	1.30 /	1.45

MATERIALS

Blanc Fixe

Prices firm. Supply adequate. Heavy demand. Currently quoted at $85.00 in bags, car lots, at works, 6 cents per pound, l.c.l., deld. By-product supply somewhat restricted. Quoted at $77.50 per ton, car lots, at works, 6 cents per pound, l.c.l., deld.

Bleaching Powder

Demand improved. Prices steady. Prices range from $4.50 to $5.00 per 100 pound drums, l.c.l., works.

Casein

Argentine flush season underway. Production good. Prices rising on speculation. U. S. supply light. Current prices on processed acid precipitated grades 22½ to 23 cents, imported grades 19¾ to 20 cents, f.o.b. shipping point, car lots.

Caustic Soda

Demand heavier. Stocks adequate for prompt shipment. Contract prices for 1950 unchanged. Solid caustic is reported at $3.05 per cwt. flaked and ground is quoted at $3.45 per cwt., in 400 pound drums, $3.95 per cwt. in 100 pound drums —car lots, at works; liquid 50 percent in tank cars at $2.40 per cwt.; liquid 73 percent in tank cars at $2.50 per cwt., at works.

China Clay

Demand strong. Supply of domestic and imported ample. Domestic airfloated filler quoted at $10 per ton, water-washed $11.00, car lots, f.o.b. mines. Coating clay is $16 to $30. Imported clays repriced to $15.20 and $28.35 short tons, export warehouse.

Chlorine

Demand strong. Supply condition tighter. Prices firm at present levels for 1950 contracts. Currently quoted at $2.40 per cwt. in single unit tank cars; at $2.70 to $3.90 per cwt. in multi-tank cars, f.o.b., works.

Rosin

Demand spotty. Prices fluctuate daily. Expect early decision on loan. Foreign inquiry is price wise. Gum rosin in drums per 100 pounds net in car lots, f.o.b. Savannah, B, $5.75; G, H, I, K, $6.57; wood rosin, per 100 lbs., car lots, f.o.b. Savannah; B, $4.25; FF, $5.50.

Rosin Size

Demand steady. Supply good. Seventy percent gum and pale wood grades, tank cars, $5.65 to $5.75 f.o.b. southern shipping point.

Salt Cake

Supply ample. Demand good. Domestic quoted at $22.00/$24.00, f.o.b. shipping point, freight allowed to destination.

Soda Ash

Demand improved; supply adequate. Current prices, car lots per 100 pounds; light ash in bulk, $1.00; in paper bags, $1.25.

Starch, Corn

Demand strong. Supply ample. Prices guaranteed against rises to Nov. 15. Pearl grade currently quoted at $4.72 per 100 pounds; powdered starch at $4.83 per 100 pounds; white corn dextrine at $5.99 per 100 pounds; car lots, f.o.b. Chicago.

Starch, Potato

Heavy paper and textile demand excellent. Market strong. Supply short. Prices nominal. Idaho high grade quoted at $7.25 cwt. l.c.l., ex N. Y. whse. New production quoted at $5.00 cwt., car lots, f.o.b. shipping point. Maine new production stalled. No quotation.

Sulphate of Alumina

Demand steady. Prices firm. Supply good. The commercial grades are quoted from $1.50 per 100 pounds, in bags, car lots, f.o.b. works. Iron free is $2.75 per 100 pounds in bags, car lots, at works.

Sulphur

Supply ample. Demand sustained at good level. Prices firm. Annual contracts are quoted at $18 per long ton, f.o.b. mines; $19.50, f.o.b. vessels, Gulf ports. Export price f.o.b. Gulf ports is $22.00 per long ton.

Talc

Demand continues far ahead of supply. Prices steady. Domestic grades are currently quoted at $23 to $28 per ton in 50-lb. paper sacks, car lots, f.o.b. mills; Canadian at $35 and up per ton.

Tapioca Flour

Supply liberal. Fair demand. Dextrinizable grades range from $9.00/$9.90 cwt. for superior high grades to $8.25/$8.75 cwt. for highs, on dock Atlantic and Gulf ports. Medium grades range from $7.00/$7.50 cwt. on dock, N. Y., and are tight in supply, prices firm.

Titanium Dioxide

Demand strong. Prices firm. Output threatened by steel strike. Anastase 19½c pound carload lots, 20c l.c.l., rutile, 21½c pound carload lots, 22½c l.c.l.; 50-pound bags, f.o.b. plant, actual freight allowed.

IMPORTS

IMPORTS AT NEW YORK

Week Ending Nov. 4

Newsprint

R. A. Olsen, A.C.D., Donnacona, 358 rolls.
Gilman Paper Co., Gripsholm, Gothenburg, 364 rolls.
N. Y. World Telegram, Fort Avalon, Cornerbrook, 592 rolls.
Hearst Enterprises, Fort Avalon, Cornerbrook, 250 rolls.
N. Y. Times, Fort Avalon, Cornerbrook, 171 rolls.
Wall Street Journal, Fort Avalon, Cornerbrook, 177 rolls.
Bato Co., Fort Avalon, Cornerbrook, 142 rolls.
Clinton Paper Co., Fort Avalon, Cornerbrook, 245 rolls.
Bulkley Dunton Pulp Co., Fort Avalon, Cornerbrook, 192 rolls.

Baryt Paper

W. Reimerdes, Brynje, Bremen, 1 pkge.

Baryta Coated Paper

Lep Transport Inc., American Scientist, London, 5 cs.

Wallpaper

Capital Wallpaper Co., American Manufacturer, Manchester, 2 cs.
Inter Maritime Forwarding Co., American Manufacturer, Manchester, 4 cs.

You already know how U. S. Savings Bonds are building future security for each Bond holder. You know that at maturity each Bond will return $4 for every $3 he invests.

But have you realized how much you can help to assure the future security of your company by vigorously promoting your Payroll Savings Plan?

IT WORKS TWO WAYS

First—by boosting employee-participation in the Plan, you increase the security, stability, and effectiveness of your personnel group. More than 20,000 companies with Payroll Savings know that corporate success is tied directly to the security of its individual employees. Your workers who invest in Bonds as a hedge against their own personal financial contingencies will enjoy greater peace of mind—will be more contented, more careful, and more productive on the job. Your company will benefit from the resulting decrease in absenteeism, labor turnover, and accidents.

Secondly—you help to strengthen the national economy from which your company must continue to draw its profits. Bond dollars represent a tremendous backlog of deferred purchasing power—dollars that will buy your products in the years to come! Furthermore, Savings Bond sales spread our national debt.

FIVE STEPS THAT BUILD SECURITY

1. See that a top management man sponsors the Plan.

2. Secure the help of the employee organizations in promoting it.

3. Adequately use posters and leaflets and run stories and editorials in company publications to inform employees of the Plan's benefits to them.

4. Make a person-to-person canvass once a year, to sign up participants.

These first four steps should win you 40-60% participation. Normal employee turnover necessitates one more step:

5. Urge each new employee, at the time he is hired, to sign up.

The experience of companies throughout the nation indicates that at least half of your employees can be persuaded to join—without high-pressure selling. All the help you need is available from your State Director, U. S. Treasury Department, Savings Bonds Division. He is listed in your phone book.

The Treasury Department acknowledges with appreciation the publication of this message by

PAPER TRADE JOURNAL

This is an official U. S. Treasury advertisement prepared under the auspices of the Treasury Department and The Advertising Council.

Tracing Cloth

Keuffel & Esser Co., American Manufacturer, Manchester, 28 cs. (bleached cotton).

Defiance Sales Corp., Britannic, Liverpool, 4 cs. (bleached cotton).

Gummed Paper

B. F. Drakenfeld & Co., American Builder, Liverpool, 47 cs.

Cigarette Paper

J. C. Chinchilla, Pres. Harding, Alexandria, 1 cs. (booklets).

Cardboard

Absorbo Beer Pad Co., Selma Victory, Trieste, 80 bls.

H. Robitsik & Reis, Selma Victory, Trieste, 200 bls.

Surface Coated Paper

Gevaert Co. of America, Leerdam, Antwerp, 28 cs.

Writing Paper

American Express Co., De Grasse, Havre, 2 cs.

(———), Ile de France, Havre, 3 cs.

Printing Paper

Stevens Nelson Paper Corp., American Scientist, London, 2 cs.

F. C. Strype, Leerdam, Rotterdam, 5 cs. (uncoated).

Straw Paper

(———), Averdyk, Rotterdam, 12 rolls.

Paperhangings

C. A. Haynes & Co., American Scientist, London, 10 bls., 6 cs.

Filter Paper

H. Reeve Angel & Co., Inc., American Scientist, London, 12 cs.

Drawing Paper

Halperin Shipping Co., American Scientist, London, 2 cs.

Napkins

Wilson's American Co., Gripsholm, Gothenburg, 2 cs.

Sulphite Paper

Bleyco Paper Co., Gripsholm, Gothenburg, 244 rolls.

Boxboard

General Motors Overseas Operations, Gripsholm, Gothenburg, 27 bdls.

Miscellaneous Paper

Stevens Nelson Paper Corp., Ile de France, Havre, 5 cs.

R. F. Downing & Co., Ile de France, Havre, 13 cs.

Siber Hegner, Pioneer Mail, Kobe, 12 cs.

Stevens Nelson Paper Corp., Pioneer Mail, Kobe, 1 cs.

Rags, Bagging etc.

Midwest Waste Materials Co., Brynje, Bremen, 51 bls. old bags.

Midwest waste Materials Co., Brynje, Bremen, 27 bls. scrap bagging.

(———), Exporter, Trieste, 110 bls. jute rags.

Irving Trust Co., Arnold Maersk, Kobe, 120 bls. gunny bagging waste.

Darmstadt Scott & Courtney, American Manufacturer, Manchester, 129 bls. scrap burlap bagging.

E. J. Keller Co., Inc., American Manufacturer, Manchester, 86 bls. hessian bagging waste.

A. Siegle Corp., Britannic, Liverpool, 119 bls. jute waste.

(———), American Builder, Glasgow, 96 bls. thread waste, 74 bls. bagging, 55 bls. old bagging.

E. J. Keller Co., Inc., American Builder, Glasgow, 86 bls. bagging.

(———), American Builder, Manchester, 39 bls. bagging.

N. Schwab, American Builder, Manchester, 23 bls. cotton waste.

National City Bank, American Builder, Manchester, 108 bls. cotton waste.

Cowa Trading Co., Pres. Harding, Genoa, 164 bls. cotton waste, 15 bls. pickerwaste.

Herbert Mayer Corp., Boheme, Naples, 1 bls. rags.

(———), Egidia, Glasgow, 83 bls. bagging.

Blue Cross Co., Leerdam, Antwerp, 65 bls. grey linen threads, 65 bls. hemp & flax threads.

J. Eisenberg, Robert Maersk, Rouen, 60 bls. woolen rags.

A. Siegle Corp., Robert Maersk, Rouen, 22 bls. cotton waste.

J. Cohen Son Co., Robert Maersk, Rouen, 23 bls. rags.

Leigh Textile Co., Robert Maersk, Rouen, 47 bls. paperstock.

Royal Manufacturing Co., Hermund, Antwerp, 53 bls. cotton waste.

Chemical Bank Trust Co., Hermund, Rotterdam, 167 bls. bagging rags.

J. P. Fleisig, American Scientist, London, 65 bls. paperstock.

National City Bank, American Scientist, London, 55 bls. old jute mail bags.

(———), American Scientist, London, 63 bls. old jute bagging.

Casein

American Cyanamid Co., Uruguay, Buenos Aires, 1000 bags.

P. A. Dunkel, Uurguay, Buenos Aires, 1000 bags (lactic).

F. H. Paul & Stein Bros., Buenos Aires, 300 bags (ground lactic), 760 bags (lactic).

Crawford Keen Co., Uruguay, Buenos Aires, 6000 bags (lactic).

American British Chemical Supplies, Uruguay, Buenos Aires, 500 bags.

Inlo Trading Corp., Uruguay, Buenos Aires, 1500 bags.

The Borden Co. Chemical Division, Uruguay, Buenos Aires, 700 bags (ground lactic), 500 bags.

Hercules Powder Co., Uruguay, Buenos Aires, 1000 bags, 3000 bags (lactic).

(———), Pioneer Star, Melbourne, 400 bags (rennet).

Gluestock

Transatlantic Animal By Products Co., American Manufacturer, Liverpool, 209 bags.

Woodpulp

National City Bank, Samiaa, Kemi, 6017 bls. prime unbleached sulphite pulp.

IMPORTS AT BOSTON

Week Ending Nov. 5

Ayres W. C. Jones Co., American Manufacturer, Manchester, 174 bls. cotton waste.

J. T. Lodge, American Manufacturer, Manchester, 7 bls. rags.

E. Butterworth & Co., Inc., American Manufacturer, Manchester, 45 bls. old twines.

S. H. Waldstein, American Manufacturer, Manchester, 178 bls. cotton waste.

Leigh Textile Co., American Manufacturer, Manchester, 564 bls. cotton waste.

New England Waste Co., Pres. Harding, Genoa, 41 bls. cotton waste.

National City Bank, Samiaa, Kemi, 1400 bls. prime unbleached kraft sulphate pulp.

Pulp Sales Corp., Samiaa, Toppila, 4055 bls. woodpulp.

Empire Fibre Co., Averdyk, Antwerp, 200 bls. cotton waste.

1st National Bank of Boston, Averdyk, Rotterdam, 26 bls. rags.

IMPORTS AT PHILADELPHIA

Week Ending Nov. 5

Leigh Textile Co. American Manufacturer, Manchester, 86 bls. mixed bagging.

Leigh Textile Co., American Builder, Manchester, 41 bls. scrap bagging.

Leigh Textile Co., Robert Maersy, Rouen, 93 bls. paperstock.

IMPORTS AT BALTIMORE

Week Ending Nov. 4

Barnett Foreign Trading Corp., Robert Maersk, Rouen, 62 bls. cotton waste.

National City Bank, Samiaa, Kemi, 2100 bls. prime unbleached kraft sulphate pulp, 1316 bls. prime unbleached sulphite pulp.

Pulp Sales Corp., Samiaa, Toppila, 540 bls. woodpulp.

IMPORTS AT NORFOLK

Week Ending Nov. 5

Elof Hansson Inc., Exporter, Trieste, 2229 bls. bleached woodpulp.

F. P. Gaskell & Co., American Builder, Glasgow, 75 cs. coated paper (for cigarette tips).

E. Butterworth & Co., Inc., American Builder, Liverpool, 78 bls. old bagging.

American Cotton Products Co., American Builder, Manchester, 557 bls. cotton waste.

A. de Vries Trading Corp., Hermund, Antwerp, 121 bls. scrap bagging.

IMPORTS AT LOS ANGELES

Week Ending Nov. 5

Pacific Brokerage Co., Pres. Harding, Genoa, 100 bls. wrapping paper.

Brandwein Mazur Co., Pres. Harding, Bombay, 100 bls. cotton waste.

Textile & Paper Supply Corp., Pres. Harding, Bombay, 176 bls. jute rags.

IRELAND

Irish Imports of Paper

DUBLIN — In August, 1949, the Republic of Ireland imported paper and cardboard, etc., to a total value of £257,780 as against £261,965 in August, 1948. This makes a total import value of £2,130,614 for the first eight months of 1949, as against £2,196,296 in the corresponding period of 1948.

Of the August, 1949, imports, papermaking materials amounted to 808 tons, valued at £22,881 against 2,204 tons, valued at £97,311 in August, 1948.

Coated printing papers valued at £4,626 were imported in August, 1949, and at £7,058 in August, 1948.

Newsprint imports rose from 1,061 tons in August, 1948, to 20,623 tons in August, 1949, the respective values being £3,446 and £44,127.

Other uncoated printing paper imported in August, 1949, was valued at £15,057, the figure having risen from £11,018 in August, 1948.

Other import values included in the *Trade Statistics*, which have just been issued by the Central Statistics Office in Dublin, are:

Article	1949	1948
Writing paper in large sheets	£4,406	£2,246
Packing and wrapping paper	£3,046	£418
Printed wall and ceiling paper	£1,981	£5,217
Empty containers and parts (of cardboard, etc.)	£14,188	£11,619
Strawboard, not worked or corrugated	£10,068	£12,139
Other cardboard, etc., in the piece	£45,054	£25,599

Re-exports of paper and cardboard, etc., in August, 1949, were valued at £46 as against £689 in August, 1949.

Devaluation

The immediate effect of devaluation upon the paper industry in the Republic of Ireland was that Swedish wood pulp went up by £6 to £7 a ton, which is about 15 to 20 percent.

Those mills which had been getting

pulp for wrapping paper from America immediately discontinued bringing pulp across the Atlantic and looked to the Swedish market. The Swedes, described by an executive of one of the principal Irish mills as "opportunists," put up their prices right away.

The market has not yet settled down, however, and is further complicated by the fact that Swedish pulp deliveries are being postponed until the end of February.

The Irish mills have not put up their prices because these are controlled, and it would be necessary to obtain Government sanction to raise them.

The "white" mills are hopeful that they will be able to cover increased costs by increased production.

Costings, related to wood pulp requirements, are now being worked out by most Irish mills, and it is just possible that at some further date, a case will be put to Government to justify increases.

On the other hand, it is understood that the price rises did not appear to be sufficiently high to warrant increases. It is also remembered that prices for Swedish pulp fell at the end of the first quarter of 1949, and even with the present increases, the prices prevailing in the early part of the year have not been equalled.

Parkside Press, Ltd., 37 Grafton street, Dublin, has just issued the ninth edition of *O'Neill's Commercial Who's Who and Industrial Directory of Ireland* for 1949-1950, priced 21s.

The paper and boxmaking industries are well represented in it, full details of all mills, factories and distinctive outlets both in the Republic and Northern Ireland being given. These are prefaced by abstracts from the Census of Production for what is now the Republic, in 1944, and for Northern Ireland 1935. In addition, duties, where they exist, are set out fully.

In addition to listing the firms engaged in production, details of relevant trade associations, whether of firms or distributors, are included. Memberships of the various joint councils for different sections of the industry are also given.

There is also a classified section of brand names. This issue will remain current until early in 1951.

Irish Wrapping Paper Shortage

There is a great shortage of wrapping paper in the Republic of Ireland. This is due largely to the fact that there was a five-week strike in the middle of the year, and, with two weeks' holidays added to the period of inactivity thereby occasioned, at least two of the mills have been unable to make up lost ground.

The normal increase in the demand for wrapping paper which arises before Christmas has presented a further problem, and the mills are unable to meet the requirements of the wholesale merchants.

U. S. Rosin to Ireland

WASHINGTON — E.C.A., during the week ended November 5, authorized $38,000 for procurement of wood rosin in this country, and $106,000 for gum rosin, for second-quarter, 1950 export to Ireland.

PRODUCT DEVELOPMENT

MIDLAND, Mich. — Scotch tape will stick to almost anything—except DC 1107 Silicone treated kraft paper. A sample from a recent mill run looks and feels like untreated paper but it is extremely water repellent as well as "ab-hesive" to most sticky materials.

The release characteristics imparted by DC 1107 suggest the use of such silicone treated paper for interleaving

Kraft paper treated with DC 1107 Silicone liquid sheds showers while untreated wrapping paper soaks up the rain.

uncured rubber stock, camelback, tire tube repair patches and pressure sensitive tapes. DC 1107 treated paper may also find a market as shipping containers or bags for materials such as asphalt.

Paper treated with DC 1107 is so water repellent that it retains its tensile strength and tear resistance for a relatively long time in contact with water. There may therefore be another large market for DC 1107 Silicone treated paper as disposable rain coats and hats, special purpose bags and papers.

A data sheet giving the properties and describing methods for applying DC 1107, checked in a number of paper mills, may be had free of charge by writing to the Dow-Corning Corp., Midland, Mich.

Champion 'Kromekote'

HAMILTON, Ohio — The Champion Paper & Fibre Co., has introduced "Kromekote," an entirely new type of coated paper. It is high finish paper possessing easy printing qualities and duplicates the luster of the glossy photograph. Currently, it is being used extensively in the packing and labeling fields.

OBITUARIES . . . .

Leland Bartlett Moss, 46, manager of the industrial relations department of the Robert Gair Co., Ltd., New York, was one of the many victims whose lives were snuffed out in the recent airliner catastrophe in Washington, D. C., on November 1, when the huge plane, heading for a landing, was hit by a lone flyer in a smaller plane and demolished. Mr. Moss joined the Gair organization in 1929. Surviving him are his widow, Mrs. Mary Lapp Moss; a daughter, Patricia, 14; and a son, Leland, Jr., 11.

Alfred A. Hitchcock, 63, vice-president and general manager of the J. B. Pearce Co., Cleveland, and nationally known in the wallpaper field, died at his home in Glens Falls, N. Y., on November 2 where he had gone to celebrate his 40th wedding anniversary. Mr. Hitchcock worked for the United Wall Paper Co. for 35 years, traveling the entire country for the concern and becoming assistant to the president before he moved to the J. B. Pearce Co., eight years ago.

Gustave H. Pfeiffer, 45, business manager of the Hercules Powder Co.'s experiment station, Wilmington, Del., died at his home in Bellefonte, Del., on October 31. Mr. Pfeiffer, who joined Hercules in 1926 as a research chemist, and who had been business manager of the station since 1943 was confined to his home by illness since last July.

T. Gunter Smith, 45, of Atlanta, Ga., who was Southeastern manager of the Walworth Co., died of a heart attack in Monroe, La., on October 25, while in that city to attend the meeting of the Southern Division of the American Pulp & Paper Mill Superintendent's Ass'n. Surviving Mr. Smith are his widow, a son and a daughter.

Daniel H. Huyette, Jr., 49, president of the Standard Paper Box Co., Reading, Pa., died in Reading Hospital on October 20. Surviving are his widow, Mrs. Emma A. (Moyer) Huyett; a daughter, Mrs. John Britton; a son, Daniel Huyett, 3d; a brother, Russell; and three sisters, Dorothy, Mary and Mrs. Carl Thus.

Robert S. Crump, 87, chairman of the board of the Standard Paper Mfg. Co., Richmond, Va., died in a Richmond hospital on October 31. He founded the Standard company in 1901. Surviving are his widow, Mrs. Emma Ryland Crump, and several children.

Charles M. Hallman, 79, retired president and general manager of the Wyomissing Glazed Paper Co., West Reading, Pa., died at his home in Hershey, Pa., on October 25. He had been associated with the paper firm from 1922 until he retired in 1936. At one time, Mr. Hallman was secretary of the American Iron & Steel Institute and was associated with the Bank of Commerce in New York. He is survived by a sister, Miss Blanche E. Hallman.

Cleo McVicker, 46, Cincinnati paper executive, died on November 3 when the private plane he was flying crashed in a storm at West Warwick, R.I. Mr. McVicker was enroute to visit his son, a Brown University sophomore, when the tragedy occurred.

John D'Oust, 77, formerly on the staff of the J. R. Booth Co., and the Abitibi Power & Paper Co., as a papermaker, died at his home in Moose Creek, Ont., on October 21. Surviving him are three sons and two daughters.

Edouard Mercier, 58, on the staff of the Canadian International Paper Co., Gatineau, Que., died in an Ottawa hospital on October 20, following a six-month illness. Surviving are his widow, three sons and seven daughters.

Chauncey H. Cooley, former advertising manager of the American Writing Paper Co., Holyoke, Mass., died in Van Nuys, Calif., on October 22.

AMERICAN PAPER AND PULP ASSOCIATION'S PRODUCTION RATIO REPORT*

(Production as per cent of six-day capacity)

COMPARATIVE WEEKLY SUMMARIES

Current Weeks—1949		Corresponding Weeks—1948	
Sept. 24	95.9	Sept. 25	99.8
Oct. 1	97.2	Oct. 2	99.6
Oct. 8	96.6	Oct. 9	100.3
Oct. 15	97.9	Oct. 16	101.8
Oct. 22 (Revised)	99.0	Oct. 23	100.3
Oct. 29	98.6	Oct. 30	100.2

COMPARATIVE MONTHLY SUMMARIES

1948						1949	
Jan.	101.1	May	100.5	Oct.	99.1	Jan.	94.6
Feb.	99.8	June	95.7	Nov.	97.1	Feb.	92.8
Mar.	100.8	July	85.3	Dec.	87.1	Mar.	89.1
Apr.	100.8	Aug.	96.8			Apr.	85.1
		Sept.	91.8	Year Avg.	96.2	May	82.7
						June	78.6
						July	72.8
						Aug.	‡88.0
						Sept.	‡90.3
						Oct.	‡98.0

‡ Preliminary.

COMPARATIVE YEARLY SUMMARIES

	1942	1943	1944	1945	1946	1947	1948	1949
Year to Date	91.9	88.3	88.4	89.1	101.2	104.3	97.1	87.3
Year Average	90.4	87.8	88.1	89.4	101.1	104.3	96.2	

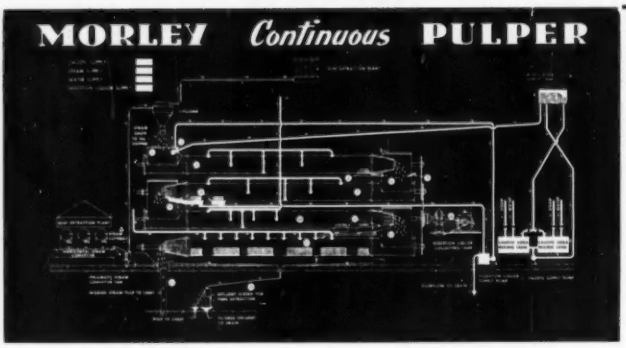
PAPERBOARD OPERATING RATIOS†

Current Weeks—1949		Corresponding Weeks—1948	
Sept. 24	91	Sept. 25	94
Oct. 1	94	Oct. 2	96
Oct. 8	92	Oct. 9	96
Oct. 15	94	Oct. 16	97
Oct. 22	94	Oct. 23	95
Oct. 29	94	Oct. 30	96

Year	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Year Avg.
1948	99	100	102	102	100	94	81	92	91	96	94	84	95
1949	88	85	79	79	78	75	64	86	87	94			

* All of the above data is based on tonnage reported to American Paper and Pulp Association. Does not include mills reporting to National Paperboard Association, except in isolated cases where both paper and paperboard are produced and separate tonnage figures are not readily available. Does not include mills producing newsprint exclusively.

† Per cents of operation based on "Inch-Hours" reported to the National Paperboard Association.



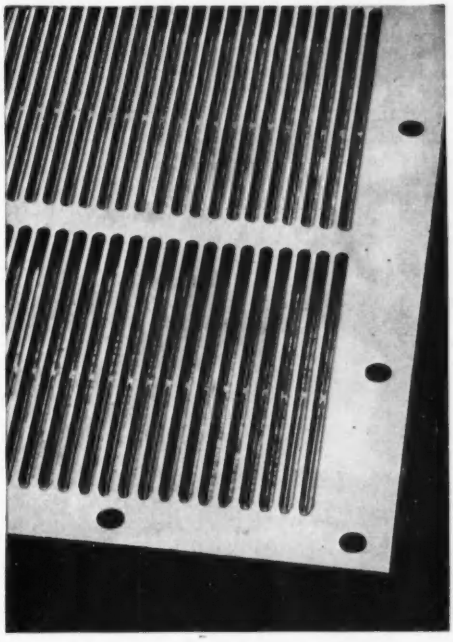
PATENTED AND PATENTS APPLIED FOR

for continuous pulping of Cereal Straws, Bagasse, and the like.

The MORLEY CONTINUOUS PROCESS AND APPARATUS, now in mill operation for five years, is a proven efficient method, operating at atmospheric pressure only. It economically and continuously processes cereal straws and other cellulosic materials to pulp for the ultimate manufacture of quality paper and/or Board, for example: .009 Corrugating, Tube Stock, Wall Board, and many grades requiring rigid characteristics.

Write for Morley Brochure

PAPER and INDUSTRIAL APPLIANCES, INC.
122 EAST 42nd STREET NEW YORK, N. Y.



Comparative Screening Tests Show FITCHBURG "NEW TYPE-DUPLEX SLOTS"

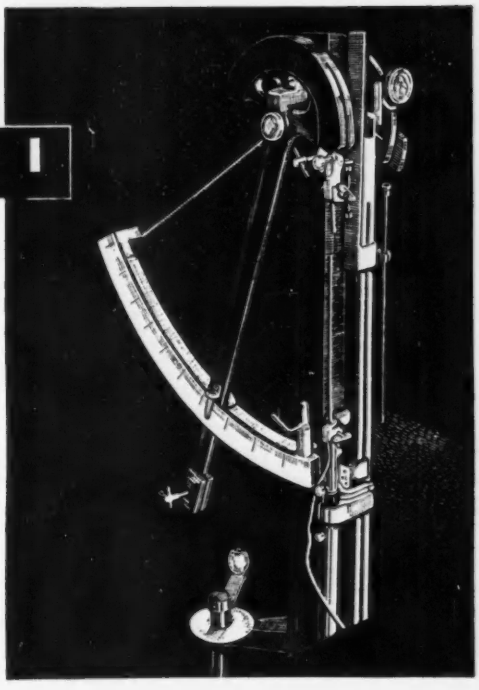
not only Screen More Stock
but maintain high capacity
hour after hour

Tested by a leading Sulphite Paper Mill against 5 other manufacturers' plates for several months they showed considerably better screening capacity in every test. *Write for copy of results.*

Fitchburg Screen Plate Co., Inc.
301 South Street, Fitchburg, Massachusetts

control

Each strand of wire produced by Appleton is carefully tested for tensile strength and elasticity. To pass these tests, Appleton Wires must be Good Wires.



APPLETON WIRE WORKS, INC.
APPLETON, WISCONSIN

CLEARING HOUSE

HELP WANTED

SALESMEN WANTED

Resident salesmen wanted to represent large western mill manufacturing comprehensive line of toilet tissue, paper napkins, paper towels and many other specialty items that are sold in volume to paper jobbers, wholesale grocers and chain stores. Write giving all details regarding experience, salary requirements and other information that will be helpful in determining qualifications. Territories open in Pennsylvania, Indiana, Michigan, Illinois, Wisconsin, Iowa, Missouri and Kentucky. Write Box 49-515, care Paper Trade Journal. N-17

ENGINEER FOR SALES SERVICE of pulp treating machinery newly introduced to the trade. Must have working knowledge of pulp and paper machinery and processes, be capable of supervising the installation and operation of special equipment, and be willing to travel. Should have about eight years actual experience in pulp and paper laboratories and operations. Age preferable 30 to 36. Applicant will be expected to possess attitude and talents which will enable him to make contributions to and work smoothly with a functional group devoted to development and sales of paper mill machinery. Correspondence held confidential. Address:

CURLATOR CORPORATION
565 Blossom Road,
Rochester 10, New York N-17

Wanted: Laboratory technician and chemist for Specialty Coated Paper Mill. Experience with dyestuffs, pigments, adhesives, plastic coatings, etc., essential. Furnish record of previous employment, salary expected etc. Address Box 49-521 care Paper Trade Journal. N-10

MAN WHO KNOWS FIBRE and stock preparation processes to handle sales correspondence with paper and pulp mills regarding process and machinery newly introduced to the trade. Should have about ten years experience in mill laboratories or operations, preferably several different mills. General understanding of mill problems is essential. Sales flare with letter writing aptitude is required. Age preferably 30 to 36. Applicant will be expected to possess attitude and talents which will enable him to make contributions to and work smoothly with a functional group devoted to development and sales of paper mill machinery. Correspondence held confidential. Address:

CURLATOR CORPORATION
565 Blossom Road
Rochester 10, New York N-10

HELP WANTED

MEN WANTED
Positions Open

Superintendent wet machine board mill; superintendent experienced in making pulp as well as bond, envelope, mimeo, writing and other papers.

Cylinder machine foreman folding box board mill, also cylinder machine foreman roofing and flooring felt; fourdrinier machine foreman, 800-1000 feet speed, salary $5,000-$6,000.

Salesman for New England and New York State, board products and paper tubes; another salesman to sell envelope, offset, index, bristol, sulphite, bond, ledger, etc. acquainted with buyers in Mid West; sales manager for paper and paper bags for Mid-West; salesman acquainted with mills in Maine and New Hampshire to sell specialties.

Chemists and chemical engineers for pulp and paper mills (4 positions); master mechanics and plant engineers (several).

We invite correspondence (confidential) with mills seeking executives and with executives seeking new positions.

CHARLES P. RAYMOND SERVICE, Inc.
294 Washington Street, Boston, Mass.
N-3

SALARIED POSITIONS $3,500—$25,000

If you are considering a new connection communicate with the undersigned. We offer the original personal employment service (39 years recognized standing and reputation). The procedure, of highest ethical standards, is individualized to your personal requirements and develops overtures without initiative on your part. Your identity covered and present position protected. Send only name and address for details.

R. W. BIXBY, INC.
117 Dun Bldg., Buffalo 2, N. Y.
TF

WANTED—Mechanical engineer for plant layout, machine design and process engineering, capable of design and drafting work. Permanent position with advancement for qualified man. Paper or board mill experience desirable but not essential. Give complete information in first letter including references and salary requirement. Address Box 49-532 care Paper Trade Journal. D-29

WORKING MASTER MECHANIC — For one machine Folding Board Mill. Good pay. Steady work. Outline full qualifications and experience. Address Box 49-500 care Paper Trade Journal. N-10

MACHINE TENDER—Fully experienced on all folding grades. Good steady job with excellent opportunity in one machine mill. Address Box 49-517 care Paper Trade Journal. N-17

WANTED CONVERTING FOREMAN — Familiar all phases converting toilet tissue, towels, napkins. Northern New York Mill. Full resume please. Address Box 49-514 care Paper Trade Journal. N-17

HELP WANTED

WANTED — Mechanical Engineer, college graduate with experience in paper industry, qualified to be Assistant Chief Engineer in supervising engineering department. Location Massachusetts. Address Box 49-534 care Paper Trade Journal. N-17

WANTED—PLANT ENGINEER to take charge of electrical, steam and mechanical maintenance in two machine mill. Send complete resume giving experience and salary expected to Box 49-536 care Paper Trade Journal. N-17

CONVERTING FOREMAN to operate toilet and facial tissue plant in New York Metropolitan Area. Must have technical background. Exceptionally good starting salary. Address Box 49-543 care Paper Trade Journal. N-10

EXECUTIVE SECRETARY WANTED for a trade association of converted paper products. Principal qualifications are industry background combined with administrative ability as well as public relations and sales promotion experience. Applications will be kept strictly confidential. Paper Napkin Association, Inc., 122 East 42nd Street, New York, 17, N. Y. N-10

MULTI-WALL BAG MAN, experienced operator on sewn bags, Metropolitan N. Y. Area. Excellent future. Write Box 7973, 217 Seventh Ave., New York. N-10

WANTED — Experienced Operator to run Knowlton automatic spiral tube machine with 5 saw cut-off. Good wages. Permanent position. Address Box 49-547 care Paper Trade Journal. N-10

ADJUSTER—Paper Bag Machines, Potdevin and Lockport flat, square, sack, New York City. Excellent opportunity. State experience. Address Box 49-542 care Paper Trade Journal. D-29

CORE CUTTER OPERATOR wanted to operate Knowlton Core Cutter in vicinity of Hartford and Springfield. Address Box 49-541 care Paper Trade Journal. N-10

WANTED—Steam Plant Engineer, capable handling high pressure boilers, general steam supervision throughout plant of large paper mill located Northern New England. Write Groveton Papers Company, Groveton, New Hampshire. N-17

WANTED—Plant Engineer for paper mill located in New England. Write Groveton Papers Company, Groveton, New Hampshire. N-17

SITUATIONS WANTED

MILL SUPERINTENDENT — Available at once, on all grades of paper. Good knowledge of Pulp Preparation. Capable of producing quality and production at minimum cost. References. Address Box 49-538 care Paper Trade Journal. N-10

RATES FOR CLASSIFIED ADVERTISING

HELP WANTED—10c a word. Double rate for heavy face type. Minimum charge $2.50.

SITUATIONS WANTED—10c a word, double rate for heavy face type. Minimum charge $2.50. If repeated ½ rate will be charged for each consecutive repetition.

FOR SALE—10c a word. Double rate for heavy face type. Minimum charge $2.50.

WANTED—10c a word. Double rate for heavy face type. Minimum charge $2.50.

OPPORTUNITIES—10c a word. Double rate for heavy face type. Minimum charge $2.50.

Classified advertising space may also be purchased at $5.00 per single column inch. All classified advertisements are payable in advance. If box number is used—70 cents additional.

Address replies to advertisements appearing under Box Numbers in care of PAPER TRADE JOURNAL, 15 West 47th Street, New York 18, N. Y.

AND HERE'S WHY.....

The inside surface of a Hydrapulper is entirely clear of obstructions. There are no dead spots where stock can pocket and avoid the terrific hydraulic and mechanical action set in motion by the all-powerful rotor.

The hydraulic action that induces rapid disintegration has the force and effect of a dozen fire hoses playing on the material.

The mechanical action that tears and disintegrates the material so fast may be likened to a buzz saw eating its way thru a plank.

Today Hydrapulpers are used for the fast, thorough and uniform pulping of virgin pulps, dirty mixed papers, rags, straw, groundwood, wet-strength, broke. More than 500 already in service

Available in several designs and wide range of capacities for batch or continuous operation.

KOMLER SYSTEM EQUIPMENT
•
PRODUCT OF DILTS

SHARTLE BROS. MACHINE CO., Middletown, Ohio

DILTS MACHINE WORKS, FULTON, NEW YORK
Divisions of THE BLACK-CLAWSON COMPANY, HAMILTON, OHIO
Western Sales Office: Mayer Building, Portland, Oregon
Associate: ALEXANDER FLECK LIMITED, Ottawa, Canada
Subsidiary: B-C International, Ltd., 16 Catherine Place, Victoria, London S. W. 1, England

SITUATIONS WANTED

PLANT MANAGER—Board and paper conversion; employed; seeks opportunity in company needing cost-minded executive with proven production record and excellent labor relations history. Address Box 49-528 care Paper Trade Journal. N-24

ENGINEER—25 years experience developing pulp and paper mill machinery. Now employed as head of engineering department. Good personality, married, excellent reference. Replies held confidential. Address Box 49-495 care Paper Trade Journal. N-10

COATED PAPER CHEMIST—25 years experience, color work, coating dept., production. Past two years resin emulsion coatings. Desire position as coating and converting assistant superintendent or superintendent. Excellent health, progressive, references. Address Box 49-524 care Paper Trade Journal. N-17

CYLINDER MACHINE TENDER experienced on corrugating, test liner and kraft specialties, desires work as machine tender, back tender or millwright, 30 years experience in running cylinder machine. Address Box 49-537 care Paper Trade Journal. N-10

ASSISTANT TO MANAGER — Graduate Chemist with fifteen years experience in boards, wrapping, toilet and facial tissue. Thorough knowledge of converting mill operation and technical control. Now employed but invites correspondence with cost conscious executive seeking to establish better quality control. Address Box 49-539 care Paper Trade Journal. N-10

MACHINE TENDER wants position on Board Machine. Light or heavy weights. Best of references. Address Box 49-549 care Paper Trade Journal. D-1

DESIRE POSITION in Production or Technical Department. 35, Ph. D. 8 years experience development and control. Sulphite, kraft, semi-chemical, bleaching, printing and sanitary papers. Address Box 49-545 care Paper Trade Journal. N-17

FOR SALE

GOOD VALUES—NEW & USED

60" Hamblet Sheeter with Erie layboy and 10 roll backstand, double deck, with shafts and chucks, also 4 sets of slitters. A fine value.

34" Camachine No. 6 Slitter.

32" Hobbs shear cut Slitter, rebuilt like new.

39" Chandler & Price Automatic Power Paper Cutter.

New 44" National Auto. Power Cutters and 36" National Hydraulics.

Baling Presses, both hand and power.

Motors, both A.C. & D.C. for any purpose.

THOMAS W. HALL COMPANY, Inc.
120 West 42nd St., New York 18
(Plant at Stamford, Conn.) TF

FOR SALE OR LEASE

Small paper mill with cylinder machine. Situated advantageously to sources of raw material and sales outlet. Ample room for converting plant in same building. Terms. Address Box 49-357, care Paper Trade Journal. TF

FOR SALE

2—Morden Stock-Makers complete with 200 H.P., 440 volt, 3 phase, 60 cycle motors, plus 1 spare semi-stainless steel filling.

Address Box 49-518 care Paper Trade Journal N-17

FOR SALE—SURPLUS STOCK—2500 lbs. Aluminum Foil .00035 in 100 lb. 24" Mill Rolls. Original factory crates. Immediate shipment. Pollock Paper Corp., Box 5325, Dallas, Texas. N-24

FOR SALE

1—2-A Hudson-Sharp 3 web Napkin Folder. 13½" cut-off. 8" to 15" wide. With AC motor equipment. Production 1800 per minute. Perfect Condition.

1—Paper Converting Machine Co. 4-Web Dispenser Type Napkin Folder. Production 100M per Hour.

1—Paper Converting Machine Co. ¼ fold, 2 web napkin folder with embossing attachment, Extra Embossing rolls.

CAMERON SLITTERS

1—40" Model 4-B.

1—42" Type 26, Model 2A.

1—42" Type 40-T.

1—50" and 1—60" Type 28, Model 3D.

1—52" Type 8-S.

1—62" and 1—63" Type 9.

1—62" Type 10-S.

1—62" Universal Type 6.

1—72" Type 10, Model S.

1—60" Kidder Model SH Slitter & Rewinder. Rewinds up to 40" diameter.

1—60" Hammersly Score Cut Slitter & Rewinder.

1—48" Inman Board Slitter and Rewinder. Rewinds 48" diameter rolls.

1—32" Johnstone Type 12 Slitter & Rewinder. For narrow slitting down to ¾".

Power Paper Cutters: 6 Seybold—1—40" 10Z, 54" and 64" 20th Century, 54" Holyoke, 56" Dayton, 84" 2-H. 6 Oswego—34", 44", 50", 57" and 63". White—1—40". 2 Acme—32" and 42". Sheridan—1—65". 3 S&W Undercut—63", 84" and 92".

1—84" waxing machine.

3—Potdevin Flat & Square Bag Machines. Models 292, 294 and 391.

1—Nasko High Speed Flat & Square Bag Machine. Complete and in A-1 condition. Large range of formers and gears.

1—45" German Dornbusch Embossing machine with two sets of embossing rolls.

1—50" Hudson-Sharp Model 8E Embosser. With two sets of embossing rolls.

1—36" and 1—45" Beck Rotary Sheet Cutters with 3 roll backstands and jogger delivery table.

1—40" and 1—48" Clark Aiken Rotary Sheet Cutter.

1—72" Hamblet Single Rotary Sheet Cutter with Slitting Attachment, Automatic Layboy and 12-Roll Double-Deck Backstands.

1—62" Dillon Duplex Rotary Sheet Cutter. With Slitting attachment and 24-Roll Double-deck Backstands.

2—Moore & White 106" single rotary sheet cutters with 6 roll double deck backstands & Moore & White layboys.

1—110" and 1—66" Downingtown Duplex Rotary Sheet Cutters. Each with 2 Llewellyn Drives.

1—81" Dietz Facial Tissue Paper perforator, 4½" perforation.

2—81" Dietz Toilet Paper Perforators. Sheets 4½ x 4½ and 4½ x 5 and paper towels perforated 7½ and 13½".

1—41" wide 3-color roll to roll Wolverine aniline printing press. Complete with Reeves Drive and A.C. motor equipment, practically new.

1—30" x 72" IMPCO. Cylinder Mould.

2—12" x 12" Beloit Triplex Plunger Stock Pumps.

5—Ten Plate Packer Screens.

1—Knapp, Model K.W. Napkin Wrapping Machine.

Refiners—1—Weiner, 1—Shartle.

GIBBS - BROWER COMPANY, INC.
21 East 40th St., New York 16, N. Y. N-10

FOR SALE

FOR SALE

1—Roll-O-Finer (Manufactured by Paper and Industrial Appliances, Inc.) Complete with G.E. motor, starter and auxilliary equipment. All equipment is in excellent condition. Address: Box 49-546 care Paper Trade Journal. D-1

Beck Sheeter

36" Beck Automatic Roll Sheet Cutter #1115 with sheet Piler #206
Differential Cut Register Attachment
Electronic Eye for 110 V. 60 Cy. Single Phase
Four Extra Rubber Feed Roll Discs
Three Sheet Control Tapes
Cross Bars on Revolving Knife
Brakes on Revolving Knife Shaft
Brakes on Feed Roll Shaft
1½% Overfeed Attachment
Housing Point Board
Motor Bracket
Heavy Model Parent Stand with 2—1-15/16" dia. Shafts, Cones and Brackets to carry 35" dia. rolls
Parent Stand Idler Roll
Machine never erected on floor. Original cost—$6,100. Make an offer.

Address Box 49-550 care Paper Trade Journal. N-17

FOR SALE

1—74" 9-roll calender stack.
1—84" 5-roll calender stack.
1—84" 7-roll calender stack.
1—92" 5-roll calender stack.
1—92" 7-roll calender stack.
1—104" 5-roll calender stack.
10—10" dia. x 124½" calender rolls.
1—#14A Lewellen 10:1—10 hp drive (new)
2—#114 Lewellen 3:1 class F—vertical drives—rated hp 20.
3—D. O. James herringbone drive—ratio 12.5:1—speed 485/00 rpm—rated hp—5.
1—Link Belt VG-2 variable speed drive. Ratio 2:1—hp.50 @ 104 rpm—hp.25 @ 52 rpm.
8—Falk right angle double reduction units
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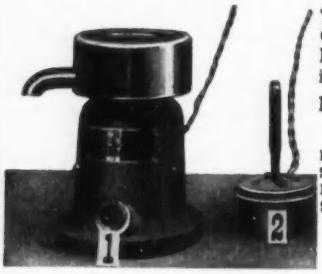

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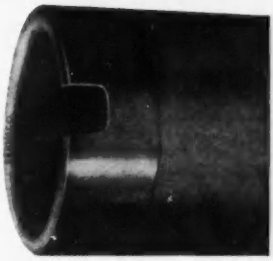

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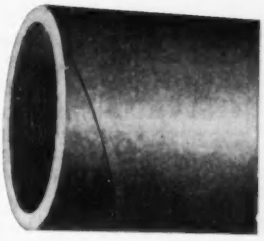

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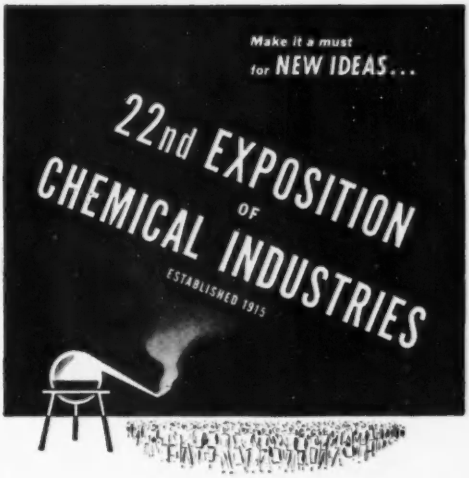

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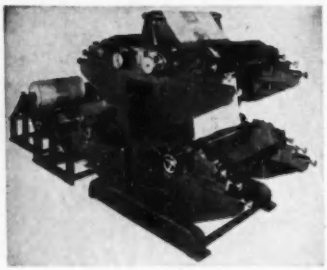

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The Sandy Hill Iron & Brass Works
Shartle Brothers Machine Co.
Smith & Winchester Mfg. Co.
Valley Iron Works Co.
Westinghouse Electric Corp.

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Farrel-Birmingham Co.
Gibbs-Brower Company, Inc.
Lobdell Co.
Norton Company
Samuel C. Rogers and Company
The Sandy Hill Iron & Brass Works

GRINDING WHEELS
Norton Company

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Askania Regulator Company
The Moore & White Co.
Mount Hope Machinery Co.
Round Brook Engrg. Co.
John Waldron Corp.

GUMMING MACHINES
Dilts Machine Works.

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Stein-Hall Co., Inc.

HEADS
Babcock & Wilcox Co.
Lukens Steel Company

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William Allen Son's Company
Davis Engrg. Corp.
Stickle Steam Specialties Co.
Westinghouse Electric Corp.

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Armstrong Machine Works
Davis Engrg. Corp.
E. D. Jones & Sons Co.
General Electric Co.
Leeds & Northrup
Minneapolis-Honeywell Regulator Co.
D. J. Murray Mfg. Co.
Red-Ray Mfg. Co., Inc.
Ross Engineering Corp., J. O.
Stickle Steam Specialties Co.
Valley Iron Works Co.
Westinghouse Electric Corp.

HOSE (Air, Water, Suction, etc.
The Goodyear Tire & Rubber Company

IMPREGNANTS
American Anode Div., The B F. Goodrich Chem. Co.

INDENTING MACHINES
Dilts Machine Works.

INDUSTRIAL TRACTORS
Towmotor Corp.

INK GRAVURE
Gotham Ink & Color Co.

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Bauer Brothers Co.
N. P. Bowsher
The Bristol Company
The Brown Instrument Co.
E. J. Cady Company
Cochrane Corp.
The Foxboro Company
General Electric Company
W. & L. E. Gurley
Leeds & Northrup Company
National Technical Laboratories
B. F. Perkins & Son
Photovolt Corp.
Taylor Instrument Cos.
Testing Machines, Inc.
Williams Apparatus Co., Inc.

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Perfecting Service Corp.

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Bahr Brothers Mfg. Co.
E. D. Jones & Sons Co.
Shartle Brothers Machine Co.
Smith & Winchester Mfg. Co.
Valley Iron Works Co.

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Hamblet Machine Co.
Heppenstall Company
E. D. Jones & Sons Co.
The Moore & White Co.
Taylor Stiles & Co.
Valley Iron Works Co.

KNOT BORING MACHINES
DeZurik Shower Company

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Bauer Brothers Co.
The Bigga Boiler Works Co.
Bird Machine Company
Dilts Machine Works
W. & L. E. Gurley
E. D. Jones & Sons Co.
Leeds & Northrup Company
National Technical Laboratories

Taylor Instrument Companies
Testing Machines, Inc.
Valley Iron Works Co.

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Dilts Machine Works.

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Hamblet Machine Co.
Moore & White Co.

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Socony-Vacuum Oil Co.
Sun Oil Company
The Texas Company
Tide Water Associated Oil Co.

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Stephens-Adamson Mfg. Co.
The Wellman Engrg. Co.

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Farrel-Birmingham Co.
Lobdell Co.
Testing Machines, Inc.

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Stickle Steam Specialties Co.

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Chicago Electric Company
Fairbanks, Morse & Co.
General Electric Company
Reliance Electric & Engrg. Co.

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NOZZLES
Link Belt Company

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Shartle Brothers Machine Co.

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Gibbs-Brower Company, Inc.
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Lukenweld
Moore & White Co.
Pusey & Jones Corp.
J. J. Ross Company
Ross Paper Machy. Corp.
The Sandy Hill Iron & Brass Works
Shartle Brothers Machine Co.
Smith & Winchester Mfg. Co.

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The Moore & White Co.
The Sandy Hill Iron & Brass Works
Valley Iron Works Co.

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Hudson Sharp Machine Co.
Langston Co., Samuel M.

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Dilts Machine Wks.
Frank W. Egan & Co.
Gibbs-Brower Company, Inc.
Murray, D. J., Mfg. Co.
Moore & White Co.
Potdevin Machine Co.
Shartle Brothers Machine Co.
Waldron Corp., John

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Babcock & Wilcox Co.
Crane Company
Michigan Pipe Co.
Michigan Steel Casting Co.
National Tube Co.
Walworth Company
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Crane Company
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Phoenix Products Co.
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Lukens Steel Company
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E. D. Jones & Sons Co.
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Potdevin Machine Co.
Shartle Brothers Machine Co.
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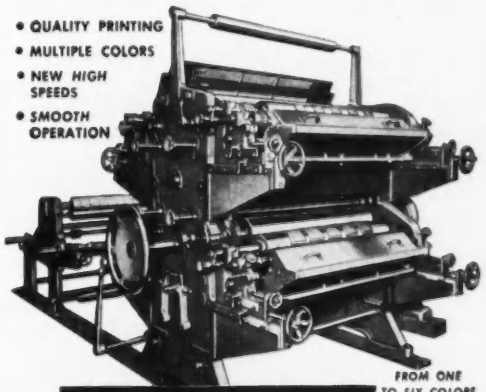

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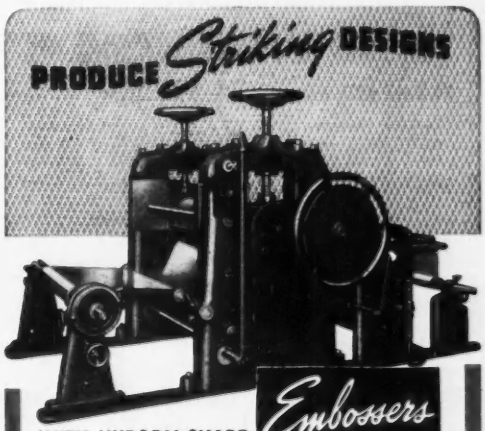

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Ross Engineering Corp., J. O.
Valley Iron Works Co.

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Rodney Hunt Machine Co.
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Shartle Brothers Machine Co.
The Smith & Winchester Mfg. Co.

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Bauer Brothers Co.
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Morden Machines Co.
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Sandy Hill Iron & Brass Works
Shartle Brothers Machine Co.
Sutherland Refiner Corp.
Valley Iron Works

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The Bristol Company
DeZurik Shower Company
The Foxboro Company
General Electric Co.
Johnson Corp.
Leeds & Northrup Company
Minneapolis-Honeywell Regulator Co.
National Technical Laboratories
Shartle Brothers
Stickle Steam Specialties Co.
Taylor Instrument Companies
Wallace & Tiernan

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The Goodyear Tire & Rubber Company
Hercules Powder Co.
Monsanto Chemical Company
Rohm & Haas Co., Resinous Products Div.

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Perkins, B. F., & Sons Co.
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Pusey & Jones Corp.
J. J. Ross Company
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Rodney Hunt Machine Co.
The Sandy Hill Iron & Brass Works
Shartle Brothers Machine Co.
Smith & Winchester Mfg. Co.
Valley Iron Works Co.
Waldron Corp., John
The Youngstown Welding & Engrg. Co.

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The Goodyear Tire & Rubber Company
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Stowe-Woodward, Inc.

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Moore & White Co.
Potdevin Machine Co.
John Waldron Corp.
H. G. Weber & Co., Inc.

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Perfecting Service Corp.

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Potdevin Machine Co.
Shartle Brothers Machine Co.
Waldron Corp., John
Weber, Herman G.

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Hardinge Company

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Merrick Scale Mfg. Co.
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Magnus Metal Corp.
Morey Paper Mill Supply Co.
Testing Machines, Inc.

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Bird Machine Company
Carthage Machine Co.
Dilts Machine Works, Inc.
Downingtown Mfg. Co.
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Link Belt Company
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J. J. Ross Company
Ross Paper Machy. Co.
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Shartle Brothers Machine Co
Stephens-Adamson Mfg. Co.
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Valley Iron Works Co.

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DeZurik Shower Company
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Moore & White Co.
Sandusky Fdy. & Mch. Co
Shartle Bros. Mach. Co.
Smith & Winchester Mfg. Co

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Carthage Machine Co.
Gibbs-Brower Company, Inc

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The Dow Chemical Company
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Hercules Powder Co.
The Hubinger Co.
Monsanto Chemical Company
National Aluminate Corp.
Stein-Hall Co., Inc.

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Testing Machines, Inc.

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E. I. du Pont de Nemours & Co
General Dyestuff Corp.
Monsanto Chemical Co.
National Aluminate Corp.
Rohm & Haas Co.
Vanderbilt Co., R. T.

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Carthage Machine Co.
Dietz Machine Works
Dilts Machine Works
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Gibbs-Brower Company, Inc.
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Hamblet Machine Co.
Hudson Sharp Machine Co.
Langston Co., Samuel M.
Moore & White Co.
D. J. Murray Mfg. Co.
Potdevin Machine Co.
J. J. Ross Company
Ross Paper Machy. Co.
The Sandy Hill Iron & Brass Works
Smith & Winchester Mfg. Co.
Valley Iron Works Co.
Waldron Corp., John

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Michigan Steel Casting Co.
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National Starch Products Inc.
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Stickle Steam Specialties Co

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Lukens Steel Company
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TALC

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Waldron Corp., John

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Testing Machines, Inc.

TENSILE TESTERS

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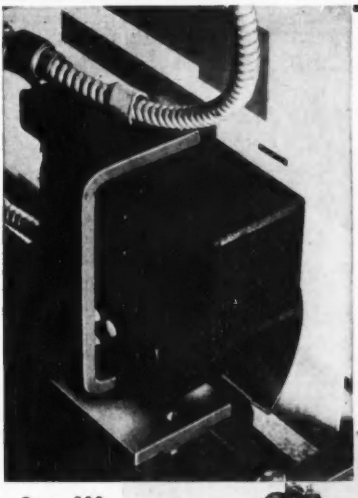
Testing Machines Inc



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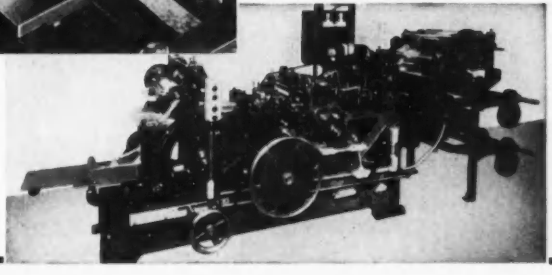

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The Sandy Hill Iron & Brass Wks.
Shartle Brothers Machine Co.
Valley Iron Works Co.

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E. I. du Pont de Nemours & Co.
Titanium Pigment Co.
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Witco Chemical Company

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Stickle Steam Specialties Co.

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TUBING MACHINES
Dilts Machine Works.

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Shartle Brothers
Valley Iron Works Co.

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J. J. Ross Company
Ross Paper Machy. Corp.
Shartle Brothers Machine Co.

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The Bristol Company
The Brown Instrument Co.
Cochrane Corp.
Crane Company
Dilts Machine Works
The Foxboro Company
E. D. Jones & Sons Co
Magnus Metal Corp.
D. J. Murray Mfg. Co.
William Powell Co.
Record Fdy. & Mch. Co.
The Sandy Hill Iron & Brass Wks.
Shartle Brothers Machine Co.
Stickle Steam Specialties Co.
Taylor Instrument Companies
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Walworth Company

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Moore & White Co.
Oliver United Filters
The Sandy Hill Iron & Brass Wks.
Rodney Hunt Machine Co.
Shartle Brothers Machine Co.
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Potdevin Machine Co.
Shartle Brothers Machine Co.
Waldron Corp., John
Weber, Herman G.

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Dilts Machine Works (Kohler System).

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Walworth Company

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Black-Clawson Co.
Carthage Machine Co.
Downingtown Mfg. Co.
Gibbs-Brower Company, Inc.
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Pusey & Jones Company
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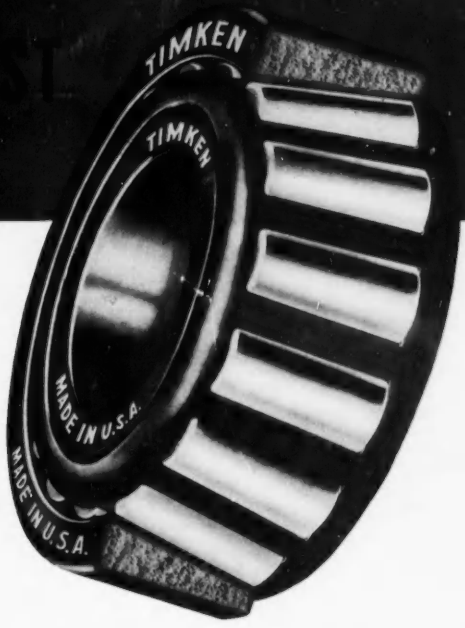

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